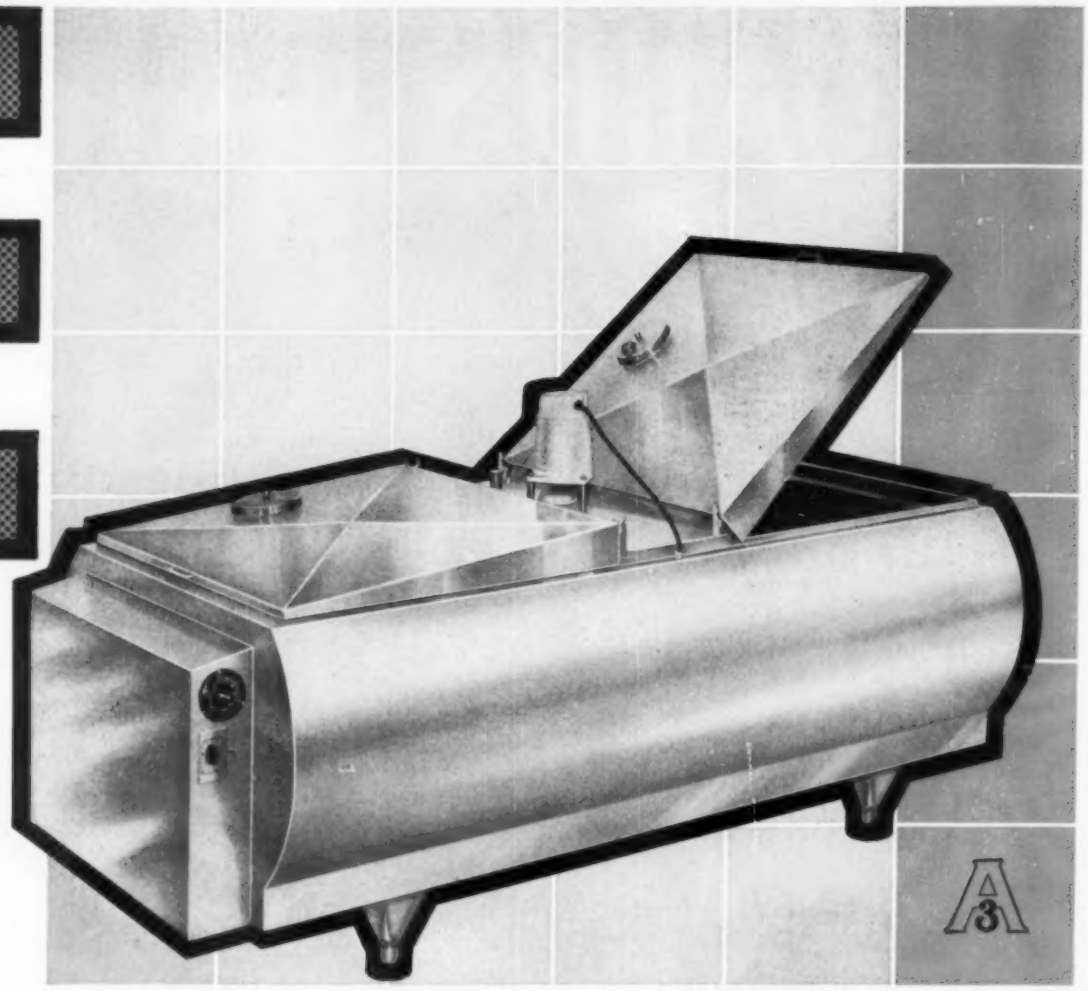
HOARD'S DAIRYMAN

JUNE 25, 1958

THE NATIONAL DAIRY FARM MAGAZINE

Excellent design
Easy cleaning
Economical operation
Exact calibration
Enduring dependability
Efficient milk handling

all add up to . . .



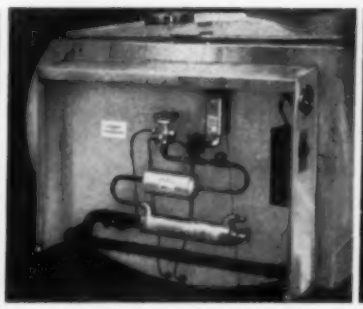
EM-BEE

Think EM-BEE when you think bulk milk tanks and you'll choose the tank that offers all of the most wanted features.

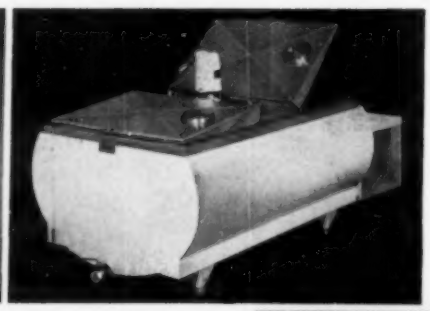
The all new, low EM-BEE offers the ultimate in bulk milk handling efficiency in a range of sizes from 150 through 1500 gallon. On all tanks you have a choice of either all-stainless steel or a mild steel, painted exterior. Self-contained tanks available in sizes from 150 through 300 gallon.

All EM-BEE Bulk Milk Tanks employ efficient, economical direct-expansion refrigeration. The unique construction featuring no metal-to-metal contact between the inner liner and the outer jacket is a major factor in the long life and economical operation of the EM-BEE tank, as it results in a minimum of heat gain and a reduction of condensation.

Other quality EM-BEE features include a built-in control panel, interchangeable covers, pipeline inlet in strainer hole lid, greaseless agitator motor, measuring stick mounted in bridge, corkboard and fiberglass insulation, and the new low, sturdy, eliptical shape.



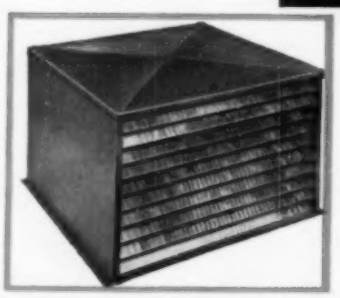
Complete control assembly is mounted on the end of each tank in a compact, easily accessible cabinet.



EM-BEE tanks through the 300 gallon size are available in self-contained models with either painted, mild steel (as shown) or stainless steel exteriors.

Whether you are pipelining or pouring milk into your EM-BEE you'll appreciate it's convenient, labor saving low height.

Now . . . a new condensing unit shelter for remote installations. EM-BEE offers a prefabricated, inexpensive shelter made from durable galvanized steel that will protect your condensing unit from the weather for years. You will appreciate its neat appearance and the ease with which the top can be removed for quick access to the unit.



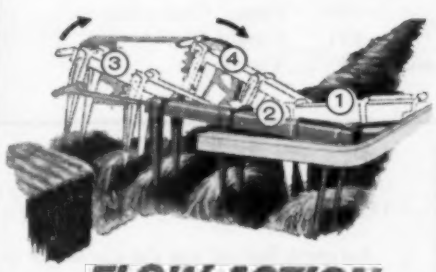
Distributorships available in some areas.

PM PAUL MUELLER COMPANY

KANSAS AVENUE AT PHELPS • SPRINGFIELD, MISSOURI

Hayliner 68 makes nutritious, good-tasting, money-saving bales.

Decide in favor of your LIVESTOCK



FLOW-ACTION
HEART OF QUALITY HAYMAKING

1. Start of stroke: Aluminum feeder-tines mounted on sturdy, spring-loaded, telescoping bar engage the hay.

2. Loading: Tines measure off right amount of hay . . . move it toward chamber. In heavy windrows, bar telescopes, prevents clogging.

3. Distributing: Tines lift upward, distribute hay evenly throughout bale chamber . . . to make firm, square bales.

4. Return stroke: Tines lift clear of chamber . . . retract to first position for next loading stroke as plunger makes slice.

Hayliner 68, fastest baler of its class, treats hay gently . . . packs evenly to make green, leafy, even-drying bales of *Quality Hay!*

Put a Hayliner 68 to work on your farm this year . . . and you'll make the best bales your livestock ever had! Tasty, leafy, rich in protein, carotene and minerals, these bales save on costly supplemental feeds . . . help you get top yields in milk and meat.

Thousands of farmers already know how much better Hayliner bales are. Since its introduction last year, more farmers bought the "68" than any other baler. Many have already tied over 60,000 bales with their Hayliners!

When you choose the Hayliner 68, you get the most advanced baler on the market —because you get New Holland's exclusive Flow-Action. You get a *proven* baler. And, you get one of the team of New Holland machines that can make *Hay-in-a-Day!*

Compact and low slung, the Hayliner 68 handles lightly. It has fewer moving parts: maintenance is easier *and* cheaper! Engine-power or P.T.O., twine -or wire-tie models.

For full information, send coupon below. To see this and other equipment *in action*, be sure to watch for your New Holland dealer's *Haymakers' Roundup!* New Holland Machine Company Division of Sperry Rand Corporation, New Holland, Pa.

NH NEW HOLLAND
"First in Grassland Farming"

New Holland Machine Co.
805 Oak Street, New Holland, Pa.
Please send me free catalog on Hayliner 68.

Name:_____

Address:_____

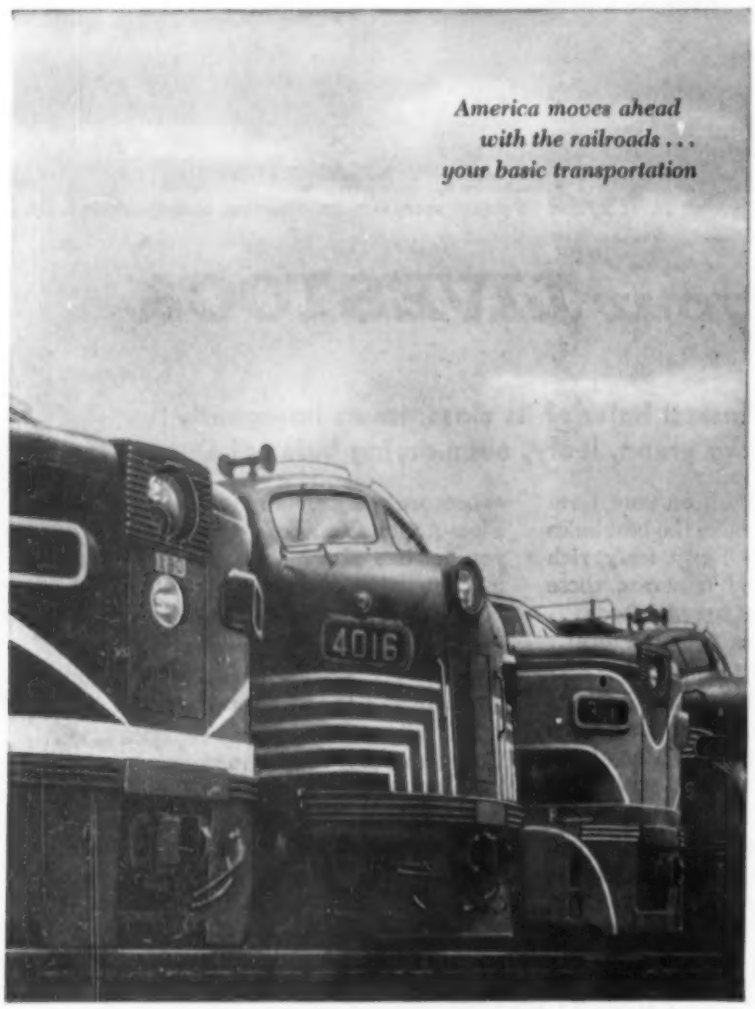
City:_____ State:_____

WEAPON AGAINST RISING COSTS

■ You're looking at more than a million dollars' worth of diesel locomotives—part of the 4½ billion dollars' worth put into service by the railroads since World War II. These new locomotives – and nearly 10 billion dollars' worth of other improvements – have made for better service, greater efficiency and lower costs. They have been a leading counterweapon in the railroads' fight against the inflationary forces of higher wages, prices, taxes and other costs. Because of such improvements, postwar increases in railroad rates have been much less than would otherwise have been necessary.

And railroads can keep on improving services and reducing costs – if the money or credit for further improvements can be found. But that means earnings – and railroad earnings are sharply reduced by outdated public policies which favor competing forms of transportation. So, the nation is denied some of the benefits of continued railroad progress – and you lose, too.

In your interest – in the interest of everyone in America – railroads should be permitted to compete on equal terms. They ask no more; they should have no less.



ASSOCIATION OF AMERICAN RAILROADS

WASHINGTON, D. C.

HOARD'S DAIRYMAN

The National Dairy Farm Magazine

Publishers
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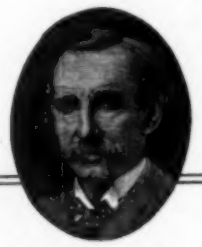
Fort Atkinson, Wis.



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Fort Atkinson, Wis.

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In This Issue . . .

Volume 103, No. 12
June 25, 1958

Title Page

"I have some advice for you!" . . . *C. W. E. Almquist* 639

Features

Oat silage or corn silage . . . which one for you? *R. J. Battin* 641
Be ready to irrigate when the rain stops . . *H. D. Bruhn* 642
How to keep hydraulic system working . . *J. A. Weber* 644
You can prevent low milk solids . . . . *J. E. Johnston* 645
Know your legal water rights . . . . . *F. Larson* 646
Home deep freezer . . . from your milk can cooler *D. W. Bates* 647
Have fun freezing . . . . . *M. Speers* 664
Buttermilk makes it better . . . . . *F. Leander* 666
We make 9 million pounds of butter . *L. A. Wuethrich* 670
How to keep a farm pond clean . . . . *H. M. Wilson* 671

Short Articles

When you paint concrete . . . . . *W. L. Roper* 652
Reduce 2,4-D drift hazards . . . . . *F. W. Slife* 658
Wagon rack for self-feeding . . . . . *O. I. Berge* 659
Ayrshire breeders meet 660
Increase sorghum yields . . . . . *W. H. Luckmann* 669
Guernsey breeders elect McKerrow 672
Rabies still a threat . . . . *E. A. Woelffer, D.V.M.* 678

Regular Departments

Washington Dairygrams . 633
Opinions and Brickbats . 635
Farm Flashes 640
Dairy Digest 649
Feeding 650
Editorials 654
Questions from Our Readers 655
Swine 657
Artificial Breeding . . 663
Dairy Farm Home . . 664
Patterns 665
Poultry 667
Young Dairymen . . 670
Handy Hints . . . 673
Veterinary 679

COVER PICTURE

Lafayette, Indiana was the site of our cover picture. These good Holstein cows are owned by Mr. and Mrs. George Brown, who operate a 200-acre farm on a 50-50 basis. Their herd numbers some 40 head. They produce Grade A milk for a local distributor.

This is a J. C. Allen and Son photograph.

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The receipt of Hoard's Dairyman is notification that money on subscription has been received. The label on paper will show date to which subscription is paid. Changes of address should reach us three weeks in advance. Include old address.

Unwholesome, immoral and questionable medical advertising is excluded. A sincere effort is made to carry advertising of only reliable people. We will always take it as a favor to be notified promptly whenever any advertiser's dealings with the subscribers are not in good faith or evidence a lack of business honor. Advertisers recognize the readers of Hoard's Dairyman as an up-to-date class of farmers, and we hold our columns for the patronage of only those with whom our readers can deal with profit and satisfaction.

Hoard's Dairyman is published on the 10th and 25th of each month. Advertising copy for the 10th of the month issue must be received before the 15th of the preceding month. For the 25th of the month issue, copy must be received by the 1st of that month.

Washington Dairygrams

FARMERS UNION DAIRY PROPOSAL ADOPTED BY HOUSE DAIRY SUBCOMMITTEE. PROVIDES SELF-HELP; 90 PER CENT PRICE SUPPORT FOR THREE YEARS; SUBSIDY PAYMENTS; MARKETING QUOTAS; COMPLIANCE DEPOSITS BY FARMERS; REFERENDUM; BOARD TO MAKE STUDY AND REPORT TO CONGRESS RECOMMENDATIONS ON PROGRAMS OPERATED AND FINANCED BY DAIRYMEN.

OMNIBUS FARM BILL SHAPING UP GRADUALLY AS FIVE SUBCOMMITTEES OF HOUSE AGRICULTURE COMMITTEE REACH CONCLUSIONS. WHEAT, WOOL, CORN AND FEED GRAINS, RICE, AND COTTON READY TO GO. SENATE NOW HOLDING HEARINGS. HOUSE ACTION EXPECTED FIRST.

COMPROMISE U.S.D.A. APPROPRIATION MEASURE PASSED BY SENATE AND HOUSE. IN GENERAL, SENATE HIGHER APPROPRIATIONS PREVAIL; MORE MONEY FOR RESEARCH, DISEASE AND PEST CONTROL, R.E.A., AND RURAL TELEPHONES. VOTED $20 MILLION FOR BRUCELLOSIS INSTEAD OF $15 MILLION REQUESTED BY U.S.D.A.

SCHOOL LUNCH FUNDS CLEARED AS SENATE AND HOUSE AGREE. APPROPRIATE $110 MILLION INSTEAD OF $100 MILLION PROPOSED BY HOUSE AND $125 MILLION BY SENATE.

FARM PRICES UNCHANGED FROM APRIL 15 TO MAY 15. SOME INCREASE IN HOGS, CATTLE, AND COTTON BUT OFFSET BY LOWER PRICES FOR MILK, TOMATOES, POTATOES, STRAWBERRIES, AND SWEET CORN. PRICES PAID, STABLE. PARITY RATIO 86.

FOOT-AND-MOUTH DISEASE INVOLVED IN SENATE PASSED BILL WHICH PERMITS TRANSPORTATION OF LIVE VIRUS TO AND FROM PLUM ISLAND LABORATORY ACROSS MAINLAND U.S. PRESENT LAW PROHIBITS SUCH MOVEMENT.

★ ★ ★

In YOUR next issue!

THIS I BELIEVE . . . To understand how one dairy farmer spokesman views current issues, five questions were put to Stanley Benham, New York dairy farmer and president of Dairymen's League. Read his straightforward answers.

BLOOD-SUCKING FLIES CUT INCOME . . . about $10 per cow per summer. It will pay you to study these up-to-date recommendations on how to control the various types of flies.

REDUCE GRAIN LOSSES BY ADJUSTING COMBINE . . . With so many different adjustments to make, it's no wonder losses are high. Don't miss this step by step discussion.

PREVENT HOT WEATHER SLUMP . . . Cows suffer from the heat, too. Nat Allen's feeding column tells what you can do to hold production.

AND MANY MORE . . .

Easy TO ORDER OR RENEW!

HOARD'S DAIRYMAN
Fort Atkinson, Wisconsin

☐ New
☐ Renewal

I enclose $_____ Please send me Hoard's Dairyman for _____ years.

Name_____ R. F. D._____

P. O._____ State_____

——— SPECIALS ———

3 years $2.00 - 5 years $3.00 (Reg. price 1 year $1.00)

(CANADIAN: 1 Year—$2.00 — FOREIGN: 1 Year—$3.00)

Zero AUTOMATION PAYS OFF!

"I PRODUCED MORE MILK LAST MONTH THAN PREVIOUSLY IN A YEAR —THANKS TO ZERO AUTOMATION!"

Zero—THE TANK WITH A FUTURE —FOR EVERY DAIRYMAN!

Note that the basic ZERO T-20 COOLER is engineered so you can easily add labor-saving equipment as you enlarge your herd and need it—according to these four methods:

1. YOU CAN START WITH A ZERO AS A POUR-IN. Ideal for small herd. Round design enables you to stand close to strainer—easing lift and lowering pouring height.

2. USE WITH ZERO SUPER-STRAINER. Does away with lifting of heavy pails. Uses *vacuum*—Nature's own way—like sucking milk through a straw. Draws pail of milk into cooler in approximately 30 seconds. Saves cost of pour-in strainer.

3. USE ZERO COW-TO-COOLER. Milk flows direct from cow to cooler, under vacuum. No need to buy and wash extra equipment with a ZERO T-20 Vacuum Tank.

4. USE WITH DIRECT MILKING SYSTEM AND SPATTER-SPRAY AUTOMATIC WASHER. This is ZERO *automation* described at right.

—SAYS FRANCIS E. KESSLER OF AUGUSTA, MO.

"Only a year ago, I decided to quit playing nursemaid to a herd of cows. I found there's a lot more to going bulk than just getting rid of milk cans . . . I knew I must have something to cut labor and increase production. Going bulk with the Zero tank gave me both. With Zero's *Spatter-Spray*, my tank washes itself *automatically*.

"In my life I have been pleased with many things I bought, but nothing ever gave me so much satisfaction."—Francis E. Kessler; Augusta, Mo.

ZERO *automation* is an exciting, new labor-saving system that's attracting international attention. Already it's saving dairy farmers countless hours of tedious carrying, lifting and clean-up. Write for full information about the ZERO T-20 VACUUM AUTOMATIC BULK MILK COOLER—and name of your nearest ZERO dealer—stating size of your herd—today!

FREE BOOK!
Tells How to Make More Money with Milk

Gives full information about ZERO T-20 BULK MILK COOLERS. Includes dimensions and sizes of different size ZERO Coolers. Shows how easy it is to slide and fit the round ZERO tank into your milk house. Write for this FREE Book today!

ZERO SALES CORPORATION
621-F Duncan Ave. Washington, Mo.

1-58

Zero AUTOMATIC BULK MILK COOLER

T-20 VACUUM —*Nature's Own Way*

—with SPATTER-SPRAY AUTOMATIC WASHER

THERE'S A SIZE Zero TO FIT ANY NEED!

USES Zero T-20 BULK MILK COOLER

—WINS QUALITY MILK AWARD FROM AMERICA'S 1957 DAIRY PRINCESS!.

For the second year in a row, a ZERO T-20 user has won the coveted Quality Milk Award. Miss Shari Lewis of Dakin, Nebraska, is shown making the presentation to Mrs. Prether, daughter of Zero T-20 owner, William Curtner of Greenville, Ohio. "Producing the highest quality milk on my market would have been hard to do without my Zero T-20 bulk tank," says Mr. Curtner.

MORE PROOF...IT PAYS TO FEED PURINA

Good dairymen and scientists always "had a hunch" that it paid, in dollars and cents, to feed cows a good grain ration, even when pasture was lush and green.

Purina thought so, too, but to remove doubt, Purina performed a carefully designed experiment which PROVED that ordinary grass alone was not enough to keep cows in condition and producing milk at the same time.

Purina split cows into two groups, matching them as closely as possible by age, size, producing ability, stage of lactation, etc. Both groups got the same handling until they went out on pasture in April. Then one group was denied the daily portion of Purina milking ration they'd been getting while the other group continued to get Purina at a rate of 1 lb. grain to 3 lbs. milk.

A difference was noted immediately. The grass-only group fell behind. But, the big difference came the next fall!

When the cows went into the barn, the grass-only group was out of condition. And, even though they went back on the same grain schedule as the other nine, they never did catch up. By February, they were behind by 1,750 lbs. milk per cow.

HERE'S THE STORY MONTH-BY-MONTH

Amount by which Purina-fed group exceeded grass-only group month-by-month (most of this extra milk was gained during the period of highest milk prices).

MONTH	PURINA AND GRASS-FED	GRASS ONLY	MONTH	PURINA AND GRASS-FED	GRASS ONLY
April 24 to May 1..	....	150.1 lbs.	October.....	1,033.8 lbs.	....
May.....	....	31.4 lbs.	November.....	1,061.2 lbs.	....
June.....	598.0 lbs.	....	December.....	3,384.4 lbs.	....
July.....	1,165.5 lbs.	....	January.....	3,988.1 lbs.	....
August.....	1,339.9 lbs.	....	February.....	2,048.1 lbs.	....
September.....	1,314.7 lbs.	....			

TOTAL 15,752.2 LBS. OR 1,750 LBS. MILK PER COW

YOUR COWS NEED MORE THAN GRASS ALONE

There's a reason why Purina's "grass-only" experiment ended the way it did.

Grass is good for cows and cows like grass, but grass is up to 85% water and there just isn't room in a cow to pack enough grass to provide her with the NET intake requirements she needs to give milk and stay in condition at the same time.

That's why cows on even top pasture need a good milking ration... to help them meet their dry nutrient requirements. See your Purina Dealer for the Purina milking ration best suited to your herd and pasture program.

FEED **PURINA**...YOU CAN **DEPEND** ON THE CHECKERBOARD FOR QUALITY...SERVICE

Opinions, Brickbats, Bouquets

These columns are open to the readers of Hoard's Dairyman for the expression of their opinion on any subject, whether radical or conservative, destructive or constructive, wise or foolish, critical or commendatory. Hoard's Dairyman assumes no responsibility for opinions expressed.

Humanizing milking machine

In a recent issue of your magazine, I read the article, "Humanizing the milking machine" by C. R. Huston, and I can in all honesty say that I think it is one of the best things ever written on man and the milking machine.

I am on the selling and servicing side of milking machines, so possibly I am looking at this article in somewhat of a different light than those on the using side, but if it were possible that this article could be read by everyone in this country who milks cows or operates a dairy farm, I am confident there would be better dairy farms and more milk production per cow than ever before.

It is supposed to be a known fact that a dog can sense when a person is afraid. Why not then, cannot a cow sense the attitude of the person who is handling her and could that not affect the milking of that cow? It is articles like the one by Mr. Huston that will do more to make for better milking programs than anything else that I know of.

To go out in a dairy farmer's barn and tell him he is not milking the correct way would not work in very many cases, but to tell him in this manner, I still wager you will help more milking operations than you will ever know.

New York CHARLES S. FLACK

Fence on wrong side?

Your April 25 cover caught my eye. Mr. Gehrke is perhaps an older, more experienced farmer than I. However, I was taught that the fence should be on the inside of the post where cattle were to be pastured to avoid the cattle pushing against the wire and pulling the staples out.

Pennsylvania TED WILCOX

Free market deceiving

Just read the article, "Before you leave the farm," by Harold McLeland. He surely painted a rosy picture of farming for our boys of today. Wonder if he realizes what it costs to get a setup of automatic farming. How long it would take to pay for all the modern conveniences at the 60 per cent to 75 per cent of parity ratio at which we are now supposed to make a living?

And anybody who tells us that a farmer can get along better in a free market is deceiving himself. We are so afraid of the government having anything to do with farming, but who is the government? It isn't somebody else. It is us — you and me — and the function of the government is to look after our interests. It is not a separate thing but our way in this country to work out our best interests, and we've got to have the help of it to survive.

Let's let the government get a price for our products so that we don't have to keep running ourselves ragged trying to produce more and more just to make more of a surplus (which I prefer to call an inventory) thus driving prices down further and further.

We hear and read a lot about farming efficiency, but I wonder how many of those efficiency experts would or have "made-a-go" of farming themselves..

We need fewer efficiency experts to tell us how to become efficient when we already can produce enough to drive prices down without their help. And we need more magazine articles that will help us to keep our boys out on the farm and build this great country into the country our forefathers fought for.

MRS. INEZ SETTERGREN

Minnesota

Percentage checkoff

The self-help bill should be amended to provide a percentage checkoff instead of an across-the-board tax. The bill now sets the same 25 cents tax whether a farmer gets $7 for his milk (as in the East) or $3 (as in Wisconsin).

A percentage checkoff of, say, 5 per cent would cost the $7 man 35 cents while the man getting only $3 would pay 15 cents.

Wisconsin RAY BARTH

Help "out" of farming

Your self-help ideas for the dairy farming industry are fine for some, but they miss the boat for most farmers. What most farmers need is to be helped "out." Yes, I mean "out."

Five years ago there were over a hundred farmers shipping to our local little bottle milk market. Now there are 70. The other 30 are otherwise employed and a lot better off than they were before, and a lot better off than the remaining dairymen.

But the 70 farmers are still too many for this market. The 30 largest ones could more than supply it.

The problem is not to help the market but to help the farmer. What he needs is assistance; assistance in selling his cows and equipment, in converting his land, and getting a new skill in the shop, construction, school teaching, or the dozens of other professions that need and will pay for his time and labor.

Hoard's Dairyman and other farm magazines can do more good by encouraging and assisting people to help themselves "out" of farming than by encouraging overproduction.

Michigan A. D.

Try to start now

In my opinion, Mr. Samson's and Mr. Green's thinking capacity reaches only to their line fences. Mr. Sampson, with a herd of a hundred or more high-producing cows, can boast that he can make it no matter how low the price of milk goes. He just can't think back to the years 1942 to 1954, the most prosperous years a dairy farmer ever had. Even the weather cooperated.

It was just about the years Mr. Samson was building up his fine

(Continued on next page)

"Vel washes our milking equipment Grade-A clean

...cleans away milk scum with no hard scrubbing"

Read why Vel is the detergent recommended by so many milk sanitarians

Even in cold, hard water, the experts tell you, VEL gets rid of the milk scum that causes milkstone. Gets your dairy equipment Grade-A *clean* . . . to deliver Grade-A milk and top quality butter. No wonder VEL is the detergent recommended by agricultural schools and milk sanitarians. Another important thing—non-alkali VEL is *twice as fast* as soap. Saves you time. And the large economy box will save you money, too.

VEL is the trade-mark of the Colgate-Palmolive Co.

dairyman's best friend...

LO-BAX

Chlorine Bactericides

Bigger profits for dairymen depend on high-quality milk, and both depend on Lo-Bax, the dairyman's best friend. Public Health authorities everywhere have long recognized that a chlorine bactericide like Lo-Bax provides dependable, fast, efficient bactericidal action so necessary to meet the vital needs of the dairy farmer.

Lo-Bax is dry, granular and free-flowing. It is available in two forms—Lo-Bax Special and LoBax-W (with a wetting agent). And, for added convenience, a handy measuring spoon is included in each bottle.

Rely on Lo-Bax to provide positive protection in all phases of milk production, and you'll find you've stepped up to higher quality milk and bigger milk profits.

Lo-Bax® is a trademark

OLIN MATHIESON CHEMICAL CORPORATION

LO-BAX

OLIN MATHIESON CHEMICAL CORPORATION
INDUSTRIAL CHEMICALS DIVISION • BALTIMORE 3, MD.

5567

(Continued from preceding page)

herd. The most inefficient farmer couldn't help making money in those years. Now he talks about the survival of the fittest. I would like to see him start from scratch (on our prices) today as many of our young farmers are trying.

Missouri A. A. RIPLEY

Time for undertaker?

You were extremely fortunate in having Willard F. Mueller write the article, "Do agricultural co-operatives have only a glorious past?". The dairy farmers of the country should be very thankful to you and Mueller. These astounding facts are badly needed when so many cooperative institutions are at a stalemate and are dubious about getting into bed together for the good of the cause.

What is needed at the present time is a better understanding among the co-ops and also more and better leadership so that they can get out of the rut and function as they should.

My first suggestion would be for the agricultural colleges to give the county agents all over the country a furlough from the production end of farmers and devote their time to the cooperative sales end. By this, some great leadership can be found that will be the salvation of the dairy and cooperative industry. If the story by Mueller does not wake up the leaders we have, then the undertaker may step in.

Minnesota W. F. SCHILLING

"Six reasons . . ."

Hoard's Dairyman has always been top-notch as the dairyman's magazine in my estimation.

The reasons for the excellence of your magazine can only be attributed to the soundness of judgment and clear thinking of your editorial and writing staff.

This is clearly evidenced in your March 25 editorial. Please accept my sincere congratulations on "Six reasons why we support self-help." Keep up the good work.

PETER H. WASCHE
North Dakota

Pickle pickers

I was reading about the man,
who thinks our scientists should be,
All put on a desert island
For a 10-year vacation, He
had better to reserve a place,
On that desert island, too.
He'd have no use for a pickle picker,
If our scientists were through.

Wisconsin MRS. HENRY PEHL

Poor advice

E. P. Sylwester gave advice on control and eradication of multiflora rose to F.N.B. of Iowa in a recent issue.

He stated, "The problem is simply to contain it to its original plantation."

I cannot go along with Mr. Sylwester's thinking. It is quite shortsighted and a casual reading of his statements leads a practical-minded farmer to feel that he must be in the employ of some chemical company or a state or federal wildlife agency.

In my candid opinion, I sincerely feel that anyone who holds a position of trust and gives out professional advice and recommends the planting of shrubs that are of no proven value to agriculture should be found guilty of a criminal offense and punished by law.

How, in the name of commonsense reasoning, can Mr. Sylwester come to the conclusion that these multiflora rose seeds can ever be contained within the original planted area?

Our State Department of Game here in Washington has recommended the planting of this shrub here and plantings have been made. It all adds up to one thing as far as I can see.

Too much professional, ill-advised advice and all too many gullible people to their own detriment.

Why introduce more pests in the way of weeds and animals into the United States and then leave them in the laps of "Old Mother Nature" and the farmer to battle.

Washington MRS. RUBY AYER

No prompting needed

I read with much interest the article in Hoard's Dairyman regarding the use of limestone and fertilizer by H. J. Snider.

He cites some of the results obtained by the use of adequate amounts of lime and fertilizer at the various experiment stations in the Midwest soils as well as other areas. He says that a dollar spent for limestone at the Illinois experiment station returned $11.21.

There can be no question but that those who have been devoting their time and energy to finding ways to produce more on an acre of land have done a very fine job. There is likewise no question but that the increased use of lime and fertilizer would result in greatly increased production.

Inasmuch as no one can predict the future with any degree of accuracy, it would be premature to say that all of the experiment stations should close shop until demand catches up with supply of farm products. It would appear, however, to the casual observer, at least, that they should concentrate their efforts on finding markets and new uses for the products which we now have.

Let us suppose, for instance, that all the lime and fertilizer which the "experts" tell us is needed for maximum production of crops were to be applied. The resulting increase of crops would stagger the imagination. This increase, together with the surplus which we already have, would completely demoralize the uncertain market which now exists.

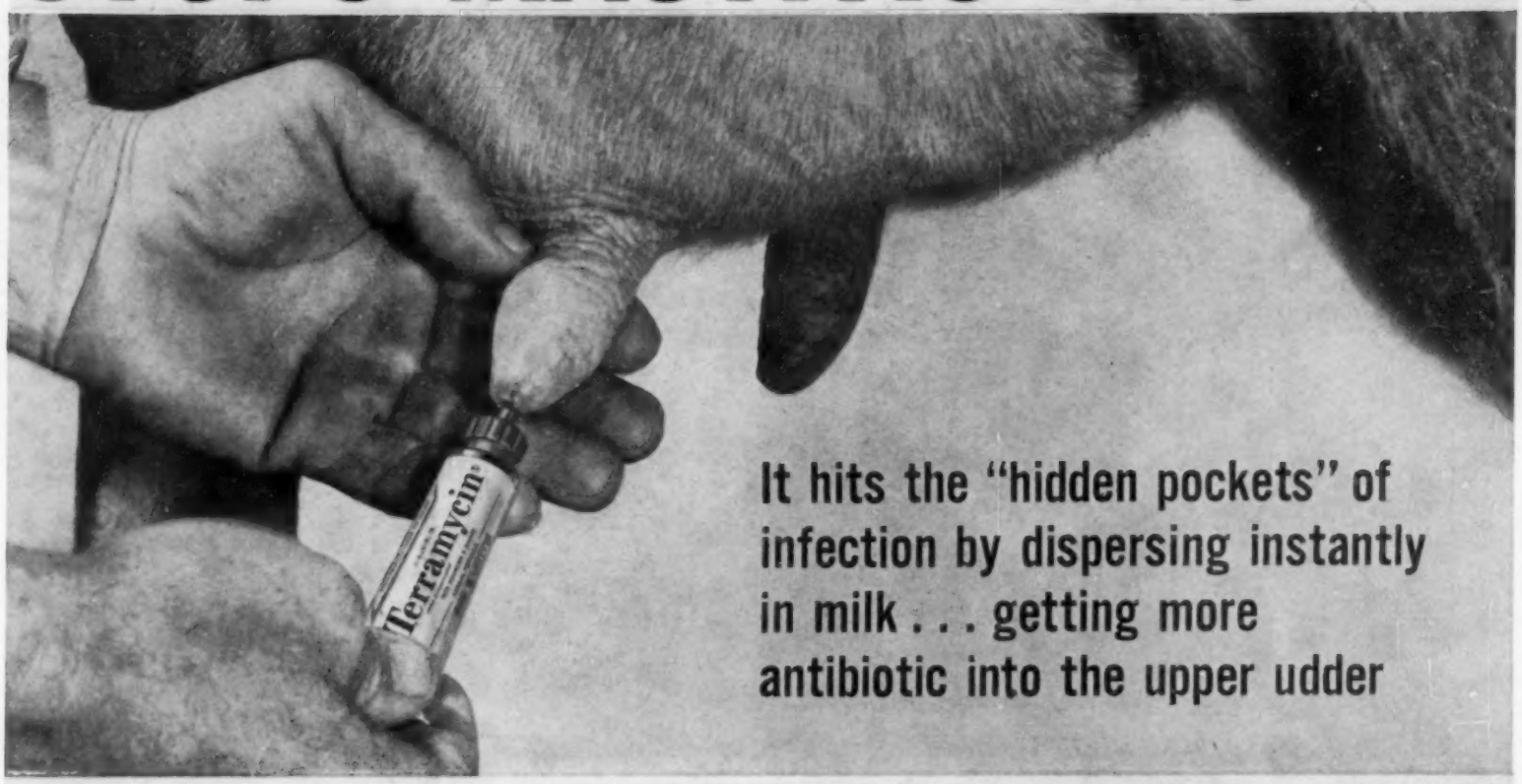
The $11.21 return for a dollar invested in lime and fertilizer would no longer be possible because of the glutted market and because of the fact that the lime and fertilizer would be much higher priced due to the increased demand.

It would seem that this is not the time to increase production; rather it is a time to find new uses and new markets for agricultural products. The fact that the agricultural colleges and those associated with them are still trying to find ways of increasing production is not consistent with the market situation of past few years.

I should like to suggest that if there ever be a time when the market will allow a reasonable profit and return on the investment, that the increased use of lime and fertilizer will follow with no prompting. The profit motive usually provides all of the incentive that is needed. It would appear that a bit of realistic thinking on the subject of farming is indicated at this time.

Wisconsin V. F. PETERSON

WHY TERRAMYCIN® STOPS MASTITIS FASTER


Terramycin
It hits the "hidden pockets" of infection by dispersing instantly in milk . . . getting more antibiotic into the upper udder

Give mastitis organisms a chance and they'll cut down a cow's productive ability by literally "eating away" at sensitive, sponge-like, milk-producing tissues in the udder.

That's why it's so important to stop mastitis fast—including any "hidden pockets" of infection.

Here's where new liquid Terramycin offers valuable help.

1. More antibiotic reaches the trouble spots. Liquid Terramycin instantly disperses in milk . . . gets up to 9 times more antibiotic into the upper third of the quarter.

2. Treats mastitis faster. Fast-dispersing Terramycin spreads out with the milk to the thousands of tiny sponge-like openings in the udder tissues—the hidden pockets in which mastitis germs can hide. Ordinary mastitis treatment, with massage, can be forced up into the cistern. But its grease-like antibiotic carrier can glob up, out of reach of many potential trouble spots.

3. More potent antibiotic action. Terramycin is a broad-spectrum antibiotic. This means it is more effective against a broader range of mastitis-causing organisms—giving you fast, dependable results, tube after tube, cow after cow.

This spring, when mastitis threatens, knock out trouble fast—before permanent damage can be done—by getting a supply of fast-acting, liquid Terramycin for Mastitis. More dairymen depend on it than any other mastitis treatment.

FREE handy tube-squeezer premium with every special-pack carton

Terramycin®
BRAND OF OXYTETRACYCLINE

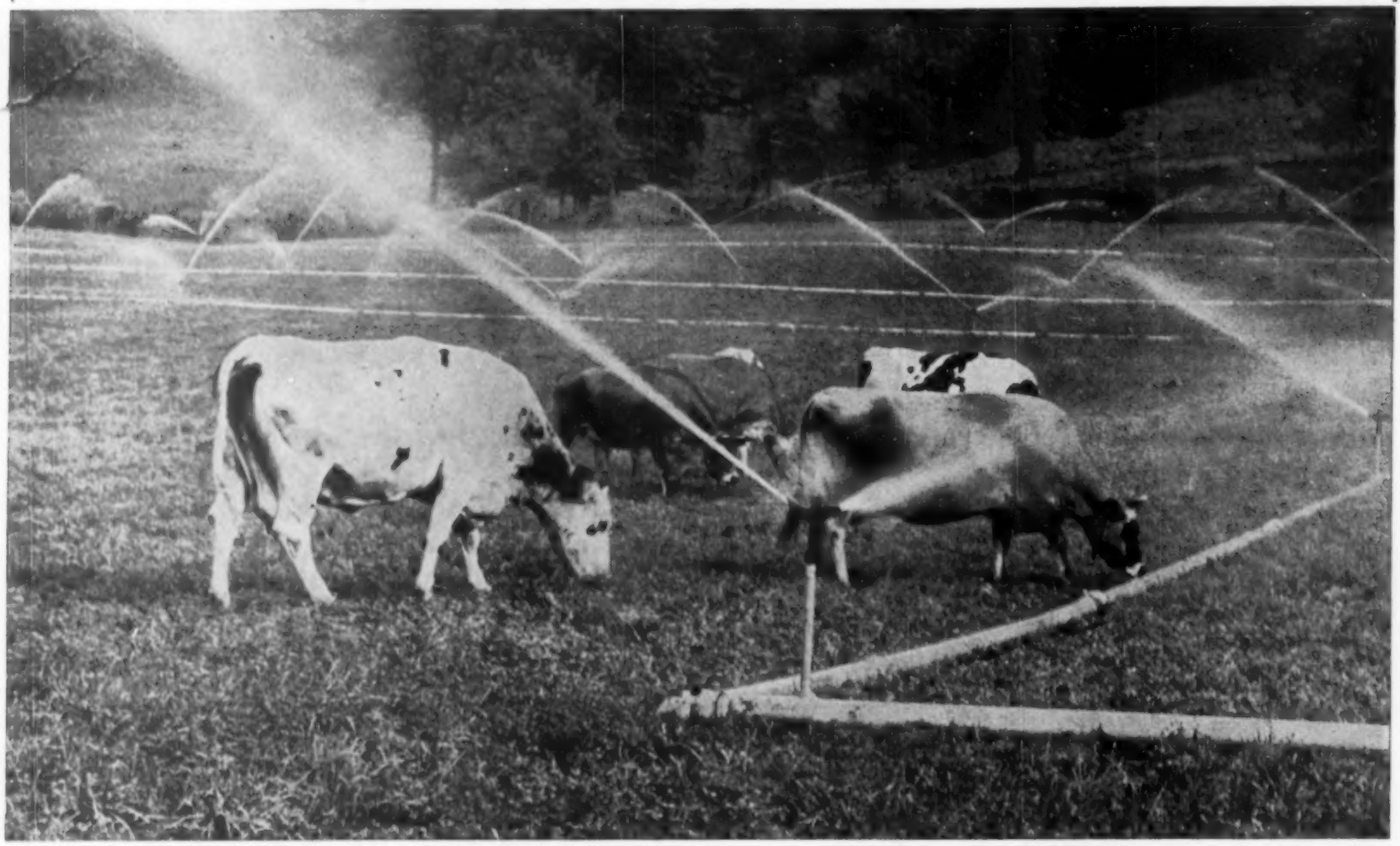
FOR MASTITIS

Pfizer

Chas Pfizer & Co., Inc.
Brooklyn 6, New York
World's largest producer of antibiotics

USS Nitrogen News

It takes more than water



Cut feed costs with fertilizer

It has been reliably estimated that feed costs represent 50 to 60 per cent of every milk producing dollar. For ½ to ½ the cost of corn and other grains, it is possible to produce good pasture, hay and grass silage. Use lime, where needed, and then fertilize to build up a high fertility level. USS Ammonium Sulfate, containing 21% nitrogen, will stimulate thick, full growth of pasture grasses. It is the best nitrogen buy available.

Top-dress pastures now for quick recovery

Don't "let nature take its course" if you want to get the highest amount of grazing from your pastures. If you do nothing to help the recovery of pastures that have already been grazed over, you are taking a chance on not getting full value from early summer rains. You will also be losing a week to ten days of good grazing.

Top-dress pastures with nitrogen as soon as you move livestock off a grazed-over pasture. Four hundred pounds of USS Ammonium Sulfate will supply over 80 pounds of nitrogen. A nitrogen treatment like this will enable you to put cattle back on pasture a week to ten days earlier than normally expected.

Ask your dealer for USS Ammonium Sulfate . . . your best buy in nitrogen. United States Steel, 525 William Penn Place, Pittsburgh 30, Pennsylvania.

Following a soil test will improve production. Ask your county agent about soil testing. He will provide the information that you will need to get a reliable test and enable you to apply all the lime and fertilizer you need.

Dairy farmers who expected big increases in forage and hay production from irrigation alone have been disappointed. Additional water alone has had little effect in increasing growth of blue grass, brome grass, orchard grass, Coastal Bermuda or any of the common pasture grasses.

The application of nitrogen, however, has stimulated remarkable growth of all pasture grasses. When 240 pounds of nitrogen per acre was applied to Coastal Bermuda grass, the pasture produced 3½ times more air-dried forage per acre than pastures which received no nitrogen. When adequate fertilizer is applied with irrigation, big increases in forage production can be expected.

"Water stretcher" boosts hay production

Even when water is in short supply, pastures benefit from nitrogen. The figures at right show how the amount of water needed to produce a ton of hay decreases as nitrogen is added.

Pounds of Nitrogen per acre	Inches of Water per ton of hay
0	13
120	6
240	4
360	3.5
600	3

(In all cases the same amount of phosphorus and potash were applied.)

Higher Protein Value

In experiments which measured the effect of nitrogen on the protein value of hay, it was found that the protein content, as well as the quantity, increased with the amount of nitrogen applied. Hay which was only 7% protein with no nitrogen contained 10% protein when grown with 200 pounds of nitrogen per acre; increased to 14% protein with 400 pounds of nitrogen; and to 16% with 800 pounds of nitrogen.

USS Ammonium Sulfate is 21% nitrogen. And, if your soil is deficient in sulfur, there is a bonus in it, for it also contains 24% sulfur. USS Ammonium Sulfate is dry and free-flowing and is therefore easy to apply. Get the most out of your pasture . . . and your water . . . with a liberal application of USS Ammonium Sulfate—available in bags or bulk.

USS is a registered trademark

HOARD'S DAIRYMAN
Founded in 1885

"I have some advice for you!"

Salk vaccine was discovered too late to save this dairyman from paralytic polio. Read his story and "word to the wise."

by Carl W. E. Almquist

HOME AGAIN, the author is rebuilding a life shattered five years ago by polio. Pictured are Mrs. Almquist and the four children; Steven, David, Candace, and Roger. The youngest, on his mother's knee, was born while his father was learning how to breathe again.

WE WERE plowing for wheat when I first felt the strange pain. It was already September 11 which is close to planting time in New York State. The constant jostling of the tractor only aggravated my pain more. By mid-morning it became unbearable. Forced to stop plowing, I returned to the farm shop while my hired man continued plowing.

This was on a Friday morning. The weather was warm and balmy, perfect for fieldwork. What was wrong with me? I hurried to the house, thinking that a good rest in bed was all I needed. My wife, Betty, busy with our three pre-school children, took one look at me and called a doctor. Her nurse's training told her I was more than just tired.

Two nightmarish days and nights followed. I recall beating my legs and body to counteract the agony. Hot baths didn't help. I couldn't eat. My normal body functions stopped. The pain would jump about to all parts of my body, steadily growing more intense.

By Sunday morning our worst fears came true. A former collegiate athlete, a strong young farmer, a father expecting his fourth child; had infantile paralysis.

Arriving at the Rochester Strong Memorial Hospital, staying independent to the last, I walked into the Emergency Ward. I wish I could remember those precious steps. I never appreciated the sheer beauty of such a simple feat for I am now medically known as a post polio respiratory quadraplegic.

In plain everyday language, I am completely paralyzed from my neck down and need artificial aids for breathing.

Was wedding anniversary . . .

The following morning, September 14, our seventh wedding anniversary, I awoke to the horror of total paralysis. However my breathing was still strong. How my cute blonde wife kidded me about the extremes to which some men will go to avoid taking their wives out on their anniversary. The situation was far from funny, but it is this type of humor which has carried us over some mighty rough bumps in the past few years.

Hours later my breathing grew faint. Only the waiting iron lung outside my door, furnished by the March of Dimes, saved me. An emergency operation in my windpipe (tracheotomy) eased my breathing. Then everything went blank.

For the next week I lived in a dream world, unaware of my worried family and praying friends, unaware of the constant vigil by doctors and nurses, unaware of my nip and tuck fight with death. The doctors gave Betty no hope. "He'll have to have a constitution of a horse if he is to pull through this," they said.

The horse won. My fever broke and I became conscious again to all the grim realities that are possible in polio: Pneumonia, a blood clot in my left leg, intravenous feeding, speechlessness, a tracheotomy, powerless to move, entombed in an iron lung!

What more was there to endure and still be alive? I did have one possession and that was **time. Time** to think of all my frustrated hopes and dreams, my ambitions to be a successful dairyman, my desire to be of service to my community, the plans to raise our family in the wonderful environment of farm life. Was this paralysis temporary or permanent? Would I ever breathe freely or walk again?

My aching body and tortured mind sought refuge in my past.

Everyone's life has a beginning. Mine started on a small general farm near Buffalo, New York, the second oldest of four children. I still marvel how Dad and Mother (Mr. and Mrs. Walter Almquist, East Aurora, N. Y.) managed to raise four kids during the depression, pay for the farm, all on 65 acres of tillable sandy loam.

Yet in spite of some lean, hard years on the farm, the love of the land was instilled deep enough so that all three of us brothers wanted to make some phase of agriculture our work.

Farm life taught me how to work and take responsibility. 4-H activities helped develop a love for rural living. I knew at an early age that I wanted to become a farmer. A year after high school graduation I entered the college of agriculture at Cornell.

A top athlete . . .

My first two years were spent on a general ag course with emphasis on livestock husbandry. Later my interest shifted to ag economics. The limited time I had between studies I devoted to sports, especially wrestling and baseball.

As a sophomore I was not only lucky enough to make the Cornell wrestling team, but became the 155-pound Eastern intercollegiate champion. Later that same spring I played varsity baseball and won the Ivy league batting crown while smacking the ball at a .460 clip. These were thrilling experiences to this farm lad, climaxed by my selection as Cornell's outstanding athlete of the year.

But the war was on and school closed early that spring in 1943. My younger brother, Calvin, had enlisted in the navy the previous March. I had promised Dad to come home and run the farm. The draft board approved.

The war interruption had its compensations and heartaches. I was able to earn enough money for my four years of college. I also met my future wife and farm partner, Betty Neufang, the daughter of our local minister. But tragedy struck our family when brother lost his life in war action. Dad decided to sell the farm and I returned to school.

After graduation in 1947 and without a home farm to return to, I accepted a job in the agricultural extension service. Later I worked for an insurance company in the farm mortgage loan department. This was valuable experience. All this time we kept an eye open for that opportunity to begin farming.

The big moment presented itself in the summer of 1950 when my father located a 168-acre dairy farm on which he was willing to back me. It was situated in the good limestone belt of Genesee County. In a very short time, we worked out a partnership agreement and I began my life's dream of dairy farming.

Polio curtailed my farming to a bare three years. In that time our 35-cow herd of 75 per cent registered Holsteins *(Turn to page 661)*

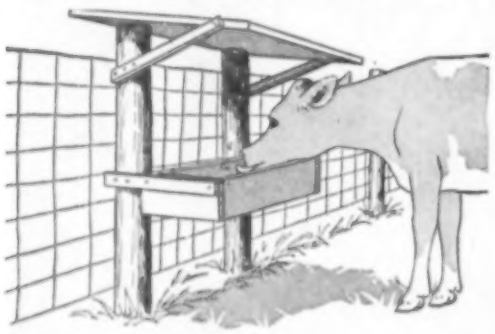
Farm Flashes . . . .

Seasonal reminders and research notes for the dairyman

GROWING HEIFERS NEED SALT

Lack of salt in the diet of growing heifers can reduce the digestibility of feed, the appetite, and the rate of growth.

This time of year, dairy heifers are frequently turned on pastures some distance from the milking herd. Sometimes they are nearly



forgotten as the press of summer work continues. Two of the cheapest and most needed minerals, chlorine and sodium, are often lacking in their diets. Salt is the source of these two important minerals.

Some dairymen follow the practice of salting heifers at two- or three-week intervals. They take salt out to the pastures and pour it on the ground or on rocks. Here it may be quickly washed away, so the heifers either get a lot, too infrequently, or may not get any over long periods of time.

Salt should be available at all times. For outdoor feeding in humid climate, it should be placed in boxes protected from rain. These may be nailed to trees or posts. A little roof out over the box prevents the salt from being washed away.

It is foolish to take chances with your valuable herd replacements when salt can be supplied cheaply and easily.

REFLECTIVE ROOFING PAYS OFF

Range shelters are cooler and more comfortable when the roof has a surface made of a reflective material.

Most farm engineers recommend the use of corrugated aluminum or galvanized sheets when building shelters. They should be placed lengthwise across the roof slope. This contributes considerable stiffness to the roof deck and permits the use of fewer rafters. Shelters with such roofs are lighter and easier to handle than other types.

Shelters with rolled roofing cover can be made more comfortable by overpainting with an asphalt base aluminum paint. This gives a good bond with the roofing and still presents a reflective surface to the sun.

AVOID LOSSES SHIPPING HOGS

Probably the most important thing to watch other than the market is the weather forecasts, if you are planning to market hogs. Hot weather hog shipping losses start their annual climb in April and reach a peak in June, according to Livestock Conservation, Inc.

Losses are not only incurred through deaths, but high shrinkage and loss of "bloom," too.

A hog has a very inefficient cooling system. The body is so well insulated that respiration is the only means of dissipating body heat.

Invariably when the temperature gets above 60 degrees, dead hogs pile up at unloading docks. Those that survive may not be profit-makers, since many suffer excessive shrink.

If you plan to ship hogs this time of year, you can avoid marketing losses by keeping the following suggestions in mind:

1. Watch weather forecasts and ship accordingly.
2. Make sure truck is well ventilated; avoid using tight grain boxes.
3. Avoid overheating in sorting and loading.
4. Load at least one less than would be safe in cool weather.

Hogs handled this way will arrive at market alive, with a low shrinkage and the kind of appearance that commands top price.

FIRE ANT CONTROL IMPROVED

Fire ant control methods are being improved through research at Mississippi State College. The latest death-dealing method involves a tractor equipped with both a blade to level the mounds and spray equipment to shoot insecticides on the exposed ants.

H. B. Green, Mississippi entomologist, reports that this method is effective and inexpensive. The equipment will cover 10 to 20 acres per hour and the treatment will cost only about 25 cents per acre.

Where the mounds are scattered, it is advisable to shut off the spray to avoid loss of insecticide and to reduce contamination. A spring and valve action has been developed to provide automatic cut-off with power lift.

Either heptachlor or dieldrin works well. With the equipment described here, operated at about five miles per hour, one-quarter pound of actual insecticide for each 10 gallons of spray gave good kills over a period of several weeks. Even though a small amount of insecticide is used, it is best to remove livestock for about two weeks.

This method of fire ant mound treatment has been tried only under winter and early spring conditions. The researchers believe this is the best time since the ants are then more concentrated in the mounds aboveground.

AVOID SUMMER MILK SLUMP

Don't blame your cows if milk production slumps in hot weather. Many dairymen believe that by turning the herd out to pasture, most labor and feeding problems are solved.

This can be a serious mistake since there are only a few cases in which pastures furnish a uniform and adequate supply of feed all summer. A drop in production is usually due to a shortage of feed.

Frank Wright, Rutgers University dairy specialist, says that cows eating 150 pounds of young, lush rye grass six or eight weeks ago will be lucky if they can find 60 pounds in midsummer.

Dry, mature pastures have less protein and other nutrients than first-class, green-growing pastures. Unless you make up for this change in nutrient content by extra feeding of hay, silage, or grain, production will slump.

On extremely hot days, cows may not even walk to pasture. That's the time to feed silage or follow some sort of green-feeding program.

CHIGGERS CAN BE CONTROLLED

Chiggers, those tiny little mites that cause picnickers such a hard time, can be controlled easily by either of two materials according to a Kentucky entomologist.

Both chlordane and lindane are effective. Chlordane is applied at the rate of two pounds of actual material per acre; lindane, at the rate of one-quarter pound an acre. One application of either material is generally good for one to two months. The material can be used in the form of the emulsion concentrates, wettable powders, or dusts.

On short grass, sprays are used at the rate of 25 gallons per acre, or about 1 gallon for every 1,800 square feet. One pint of the 40 per cent chlordane emulsion, or ¼ pint of the lindane emulsion, will make about 5 gallons of the spray mixture. Where tall grass or weeds exist, apply 50 gallons per acre.

Apply dust containing 5 per cent chlordane at the rate of 40 pounds per acre, or about 1 pound per 1,000 square feet. Dusts containing 1 per cent lindane should be used at about 25 pounds per acre, or 1 pound per 1,800 square feet. When using wettable powders, apply chlordane at the rate of 4 pounds per acre, or 1½ ounces per 1,000 square feet. Apply 25 per cent lindane wettable powder at the rate of 1 pound per acre or 0.5 ounces per 1,000 square feet.

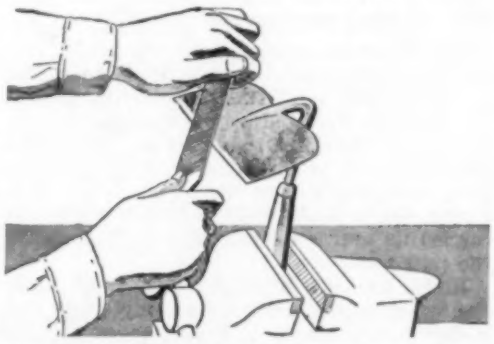
Keep children and pets away from treated areas until the spray has dried. Do not spray where livestock are grazing or will graze.

TOOL CARE EASES GARDENING

The job of gardening can be made much easier by using high-quality tools that are properly cared for and well sharpened.

When you finish using shovels and hoes, clean them thoroughly and rub them with an oily rag before you put them away. If the tools should get rusty, soak them in kerosene; then polish with an emery cloth and a wire brush.

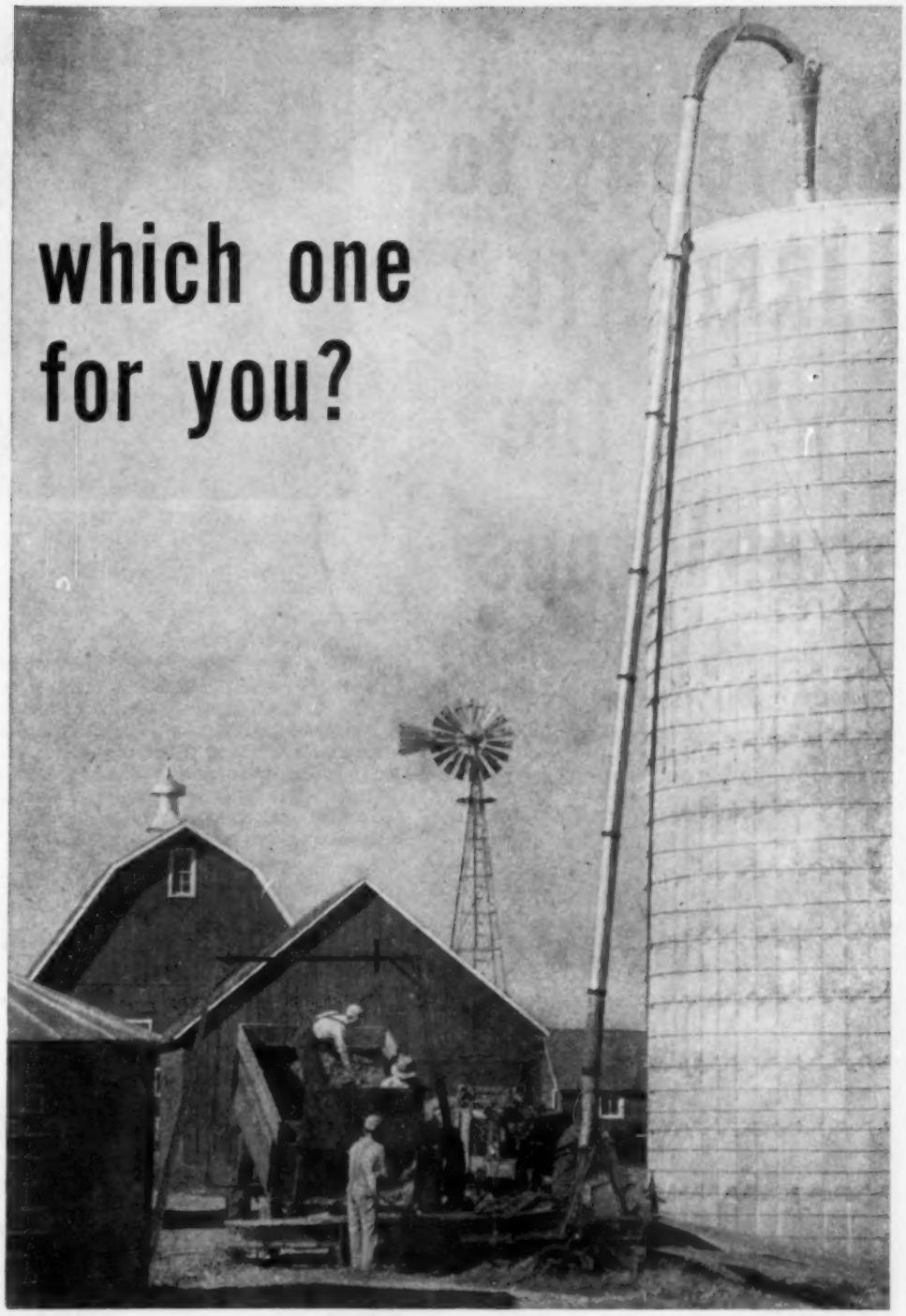
If you sharpen tools, it is best to use a 10-inch file for hoes and spades. Put the hoe handle in a vise or lean it against something to hold it steady; then file at an angle against



the cutting edge of the hoe to produce a sharp edge at the front. Never sharpen a hoe to a V-edge, for such an edge will cause the hoe to pull out of the ground. A spade, on the other hand, should be sharpened to a V-edge.

Ketosis in dairy cows is usually accompanied by poor appetite, weight loss, and a sharp drop in milk production.

Oat silage or corn silage... which one for you?



Corn outyields oats in the corn belt. If you decide to use oats, cut it in late-milk to medium-dough stage.

by Robert J. Battin

FOR decades corn silage has topped the menu as one of the favorite roughages for dairy cows. But more recently other silages have tried to muscle their way into this spot as bossy's pet "canned" food.

These invaders are grass or hay silage and more recently, oat silage.

No one can disagree that each of these feeds has some good points and that for some dairymen one perhaps works out better than the other two. But the facts about how these compare (especially corn and oat silages) have been tossed around so loosely that few dairymen know just what the score is.

It's not hard to see why corn is the number one favorite. It makes a good showing in any feed comparison trial. Yields are high; the material is easy to handle and feed; and cows apparently like its appetizing odor. It'll probably remain the favorite for many decades.

But what about the newest competitor—oat silage? This newcomer can contribute a lot to the roughage needs of dairy cows. It does, however, have some decided limitations when its good points are stretched a bit too far.

More nutrients from silage . . .

Harvesting the oat crop as silage rather than grain is one way to get more of the nutrients into stomachs of cows. But some other factors need to be considered before the decision to make oat silage is complete.

Oat silage fits best into the feeding program when it garnishes cow meals gleaned from skimpy, scorched pastures during the hot months of July and August. And for good reason, too.

The nature of corn silage helps tell where oat silage fits best into the yearly feeding program for the Mollies, Bessies, and Adas which make up the army of milk producers.

Oat silage would normally be made late in June or July, after the first crop of hay has been put up. Unless the material was fed out during the summer, the silo would be full and there'd be no place for corn silage that fall.

Such a practice would be costly from two angles. One is the straw that is used in the silage rather than being saved for the comfort of the cows the following winter. If other sources of bedding material were readily available at reasonable costs, this wouldn't be much of a problem.

Good silage from stalks . . .

The other angle involves all the feed and nutrients tossed away by leaving the cornstalks in the field. Stalks of corn in the form of silage are more digestible than is the straw of oats in oat silage. Cornstalk silage is as digestible as clover hay. If the silo were full of oat silage, where is the dairyman going to put the cornstalks?

This represents a lot in terms of feed quality and value. A farmer can get about one ton of corn silage from the same area which ordinarily would yield about five bushels of shelled corn if harvested as grain.

Figure the feeding value of corn silage another way. Look at it as a mixture of hay and grain, the stalks being the hay. In a ton of silage there's the equivalent of one-sixth ton of hay in total digestible nutrients (T.D.N.) plus the four to five bushels of corn grain. Without taking the cornstalks, for each 25 to 30 bushels of grain harvested, the equivalent of a ton of hay in the form of cornstalks is left in the field.

On the other hand, suppose a farmer fills the silo with oat silage rather than corn silage. Besides losing straw, yield is only about one ton of silage from the area where seven to nine bushels of oats could be harvested.

But yield is not the only consideration. Take into account the seeding of legumes and grasses that's coming along underneath the jungle of growing oats. Although generally helpful, there are times when removing the oats for silage can be responsible for damaging the seeding.

One case in point is in weedy fields. Growing oats provide enough competition to keep the weeds down. But if oats were cut, the weeds could shoot up and seriously compete with the seeding for sunlight, water and nutrients. If oats were left to ripen, the weeds would eventually grow enough to be cut with the oats.

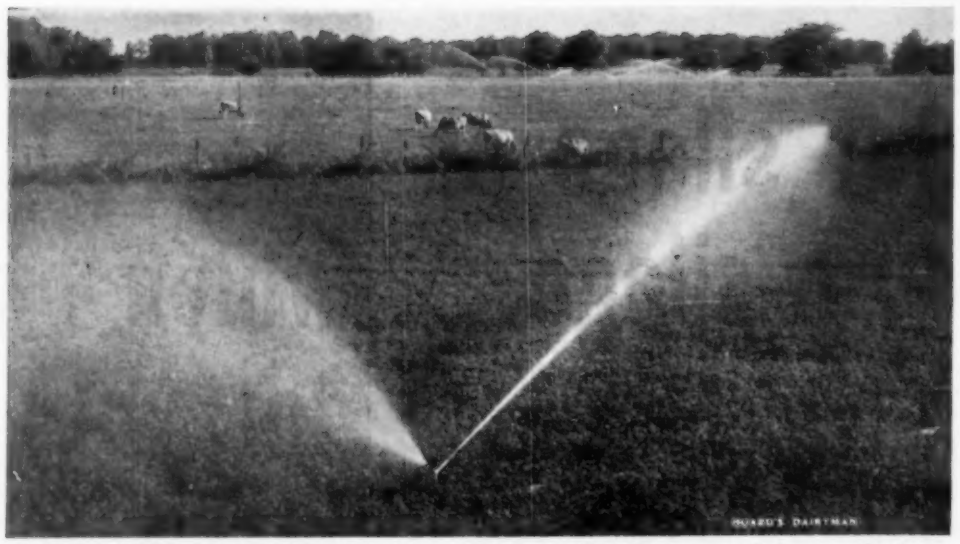
Oat silage is generally put up after the first cutting of hay is out of the way. But there are usually other jobs, such as cultivating corn, which are demanding the labor at this time, too. Corn silage, however, is generally made when labor requirements are low.

Cutting time important . . .

Making oat silage requires being "on your toes." The job can't be put off several days while something else is done. The ideal cutting season is very short compared with corn silage. Oats ripen in a hurry and if the farmer waits too long, the crop will be too dry for ensiling. There are actually only three or four days at the most in the life of a field of oats when it makes a topnotch silage.

Direct-cut choppers work nicely on oat fields. Cut the material in the late-milk to medium-dough stage before many yellow leaves appear, recommends Stephen Dexter, farm crops researcher at Michigan State University. He explains that stems of *(Turn to page 662)*

Be ready to IRRIGATE when the rain stops



HEADS ROTATE SLOWLY, each throwing two fan-like sprays, one long, one shorter. Long-range spray reaches well beyond adjacent head. Nozzles give uniform distribution.

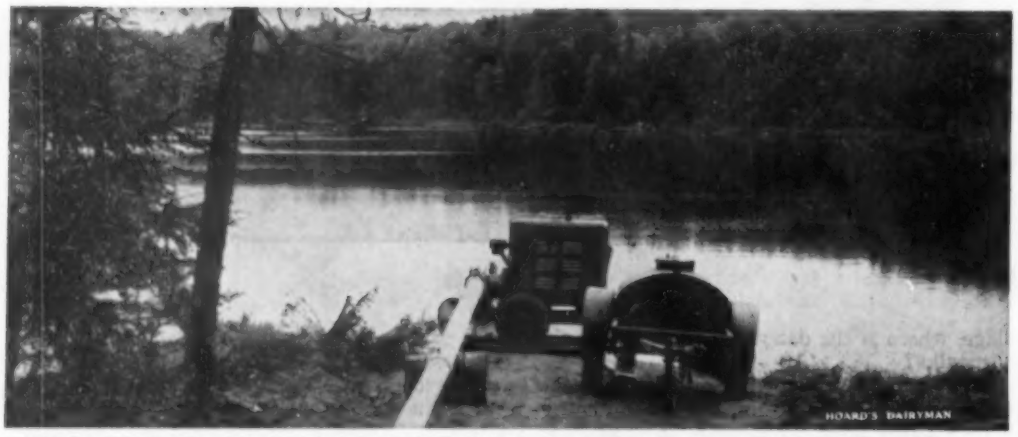
Modern irrigation equipment will help counteract a dry spell. However, a good source of water may be a limiting factor.

by H. D. Bruhn

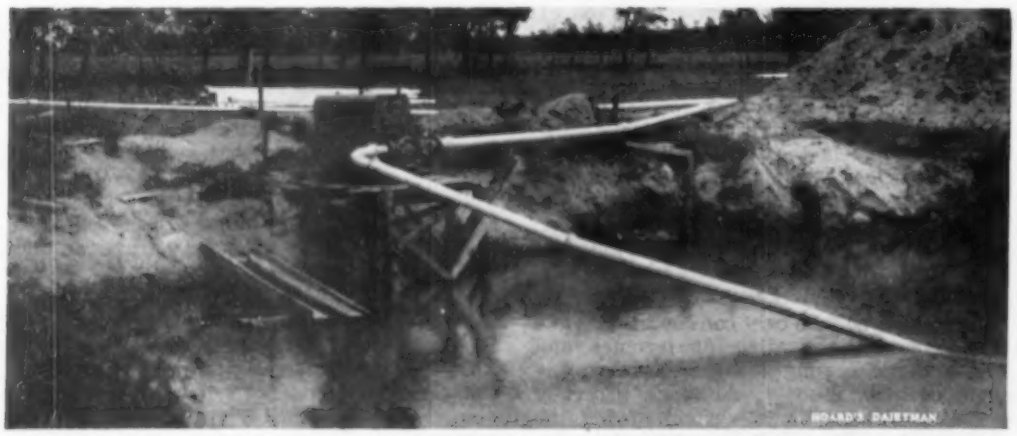
ONE of these times we are going to have a dry summer, and we may have several in a stretch. We have had them before and probably will again. The question is just when and how many. Such dry spells were experienced a few years ago in many parts of the United States and in those areas irrigation equipment sold right and left.

With irrigation, yields are larger and crop failures less frequent. Water alone does not get full credit for this improvement in crop yields, but when coupled with proper fertilization and good management, irrigation has a lot to offer. Even in the light soils of Wisconsin branch experiment stations, 100 to 145 bushels to the acre have been produced.

The author is a professor of agricultural engineering, University of Wisconsin.



PUMPING UNIT used to take water from lakes or streams is frequently portable so it can be used in several locations, thus irrigating more land with a given investment in equipment. This unit will pump 1,000 gallons per minute through a 10-inch, lightweight, portable main.



EXCAVATED PITS are good sources of water where ground water table is sufficiently high. Suction pipe extending into water must be carefully screened and supported above the pit bottom to prevent pumping sand. They are unsightly and also may be a hazard to children.

Truck crops generally can be irrigated with profit. Pasture crops are a sort of break-even proposition. To produce a higher yield, the cost of irrigation is about the same as owning enough more land to grow the extra crop without irrigation.

What can be said in favor of pasture irrigation is that in those seasons when normal pastures dry up, extra acres do not yield either, while irrigated land will come through with good pasture. Thus, it is a matter of balancing irrigation against the cost of stored feed to take care of a dry spell.

Helps in establishing seedings . . .

On light soil it used to be very difficult to establish a seeding. Now with irrigation it is no longer a problem. Proper irrigation usually is justified by an increase in the yield of the nurse crop. If necessary, the irrigation can be carried on practically up to grain harvest time. It is even consistently possible to establish a seeding in the fall. If properly managed, there are a lot of advantages in irrigation.

In the Great Lakes States area, the irrigation equipment generally is of the portable pipe and rotary sprinkler type. This is not the least expensive but has proved to be the most practical under certain conditions, especially with the very permeable level light soil and the rolling land of rather shallow topsoil that does not lend itself to leveling for flood irrigation.

Pumping costs and the distribution equipment costs of sprinkler irrigation are higher than that for the flood irrigation practiced in the drier area of the West. However, we need not apply as much water for a crop as is needed under the drier conditions of the more arid regions.

An irrigation system consists of a pumping

POWER TAKE-OFF PUMP makes a portable unit. If an extra tractor is available during the summer, it makes an excellent power unit.

unit (usually engine driven), a main to conduct the water from the pump to the field, and one or more portable sprinkler lines to distribute the water. The sprinkler line is equipped with riser pipes and sprinkler heads.

Each sprinkler head distributes water on a circular area extending to a little beyond the next riser and head on the line. This overlapping of the areas covered by each sprinkler head tends to give a fairly uniform water distribution. Standard spacings of the sprinkler are 40 to 60 feet. Occasionally, other spacings are used.

Requires two hours of operation . . .

To put on approximately the equivalent of one inch of rainfal., the sprinkler line usually is operated in one place for about two hours. This wets the ground to a depth of 10 to 12 inches in a light soil. The sprinkler line is moved a distance of approximately twice the sprinkler head spacing and sprinkling is resumed. Some operators use two sprinkler lines so they can operate one while the other is being moved.

The sections of aluminum tubing, almost universally used nowadays for sprinkler lines, are four to six inches in diameter. The ends are equipped with self-sealing, quick couplings which lock themselves automatically as the ends are pushed together. They can be unlocked either by a twist of the tubing or by lifting a small latch.

Irrigation equipment is not used only to water the crop. Frequently, fertilizer (nitrogen) is injected with the water to give a supplementary application of fertilizer.

A good water supply is, of course, a necessity. Earlier irrigation systems frequently were set up to pump water out of a lake or stream. With such a source of water it is a rather simple and inexpensive matter to prepare a pump location. Such systems have shown us the advantages of irrigation. However, streams or lakes are not always adjacent to land to be irrigated. Also, in seasons when irrigation is most needed, the level of the streams and lakes is also apt to be low.

Whether or not irrigation pumping is really responsible for a drop in water level, it will most assuredly get the blame. One or two irrigation systems on a small stream may not materially affect the stream flow. However, if any number of land holders along a stream decide to irrigate, they might pump it dry.

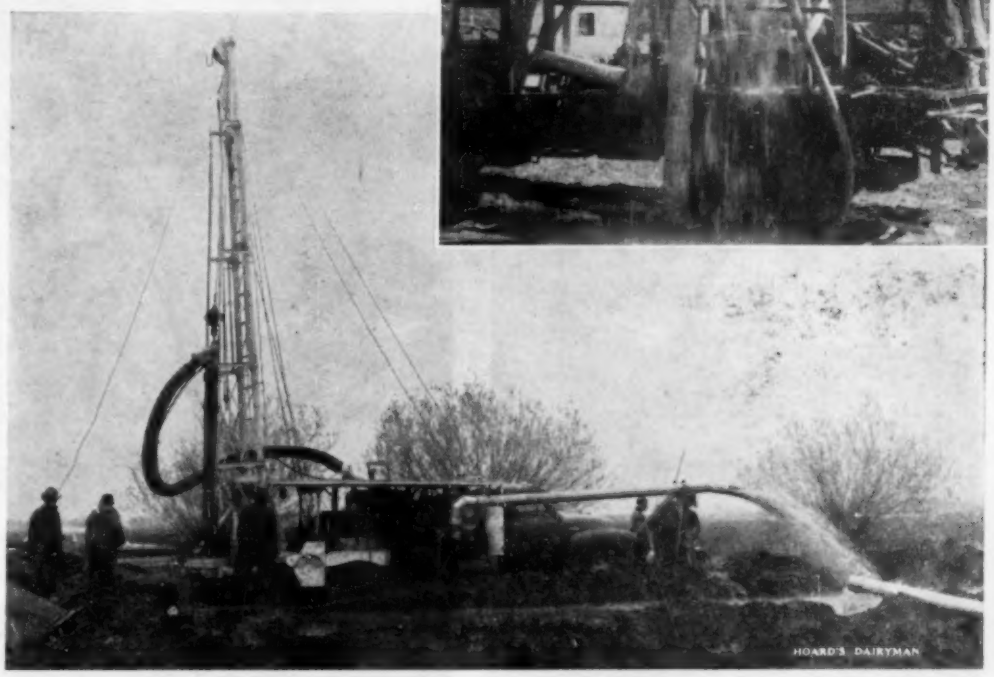
Know your water laws . . .

Water laws vary from state to state. Some of the Midwest states are revising their laws, hoping to prevent future confusion and difficulty, not only due to use of water for irrigation purposes but also for industrial and municipal use.

In Wisconsin, a permit issued by the Public Service Commission is necessary to legally take surface water from a lake or stream. Considerable care is exercised in granting these permits. A great expansion of irrigation from these sources of water cannot be expected unless the food situ- *(Turn to page 656)*

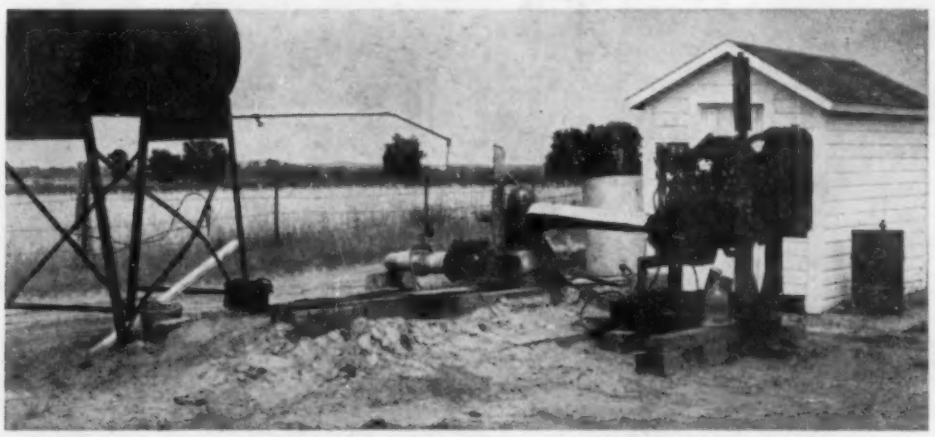
JETTING shallow wells need only simple, inexpensive equipment and a small crew. Water is pumped down through an inside pipe to force sand and water up through jetting tube. Usually jetting tube can quickly be worked into ground.

ROTARY DRILLING RIG is boring a 32-inch well. Water is allowed to run into well during the drilling. Rig pumps water with sand and gravel up through hollow shaft, thus deepening the well.



BOOM-TYPE SPRINKLER carrying one large nozzle and four smaller nozzles. Approximately 2½ acres are covered per setting at a rate equivalent to ½ inch of rain per hour.

SHALLOW WELL and pumping unit are compact. Pump takes water from single well through suction hose. Discharge pipe has check valve.



DEEP WELL CONSTRUCTION requires service of a professional well driller. Proper casing and screens are necessary. Shown is the geared head on turbine pump and discharge line in center of the picture with engine shielded drive shaft on right side.

How to keep hydraulic system working

Since dirt is the chief enemy, avoid hydraulic troubles by keeping system clean. Always lower implement to the ground when not in use.

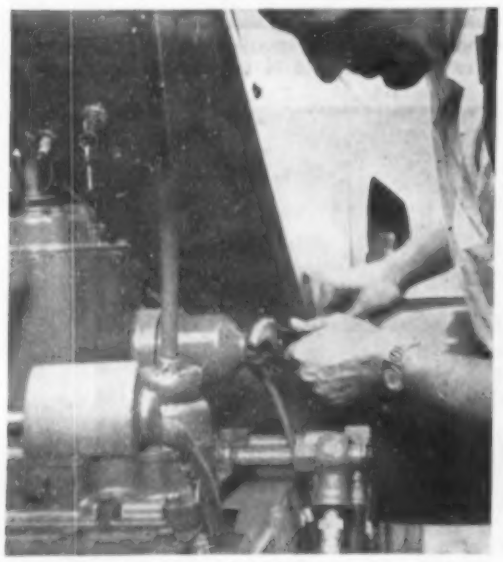
by J. A. Weber

LINT-FREE CLOTH should be used to clean hydraulic couplings before they are connected.

SUPPORT ROD keeps hoses from catching in machine. Adjust so couplings can't touch ground.

CONTROLS AND CYLINDERS should be in positions specified for proper check of oil level.

BEFORE REMOVING the filler plug, thoroughly clean area around it with rag, compressed air.



HYDRAULIC OIL FILTERS usually need to be serviced at the time of the yearly oil change.

ADJUST VALVE in return line to give smooth, steady drop for any weight or type of implement.

AS HELPLESS as a hog on ice; yes, that's the way your tractor and implement can be if the hydraulic system suddenly goes haywire. It can leave you stranded in the middle of the field with a plow that won't lift or a disc that won't angle properly. Here are a few habits for hydraulic system care that will help you get trouble-free performance from hydraulic controls.

Dirt is the number one enemy of your hydraulic system, so your number one rule should be to keep the system clean. Hydraulic systems are precision built with close tolerances that leave no room for dirt and grit. Dirt in the system causes wear of the pump, valves, and cylinders and the resulting troubles can only be remedied by an expensive overhaul.

There are three opportunities for dirt to get in and cause trouble:

1. When you are hooking up the couplings on a remote cylinder.
2. When you are checking oil level or changing the oil in the system.
3. When you are storing machines with hydraulic cylinders and hoses.

There are some habits in handling hydraulic couplings that will help keep dirt on the outside where it belongs. First of all, the ends of the hoses should never be allowed to touch the ground. Hydraulic hose support rods can be fastened to the hitch of most implements. The hoses should be adjusted in the support so the couplings cannot reach the ground when they are disconnected. Support rods also keep hoses from getting caught in moving parts.

The breakaway couplings should be wiped with a clean lint-free cloth before they are connected. Don't invite trouble by using an old gunny sack that is already full of dust. The cloth you use should be as clean as Mom's dish towel. Keep a cloth reasonably clean by storing it in a strong plastic bag or a tin can with a tight screw-type lid.

Change hydraulic oil . . .

Some manufacturers use a break-in oil in the hydraulic system. This oil should be drained after the first 20 to 50 hours of operation. After that, most manufacturers recommend that you change oil yearly. Consult your operator's manual to make sure about the recommendations for your tractor.

Whether you change oil once or twice a year it is most important that you go about this chore in the cleanest possible fashion. Make it a habit to clean the area around the drain plug and filler plug before they are removed. Clean a wide area around the plug; then loosen the plug slightly and use the air hose to blast off remaining chunks of dirt.

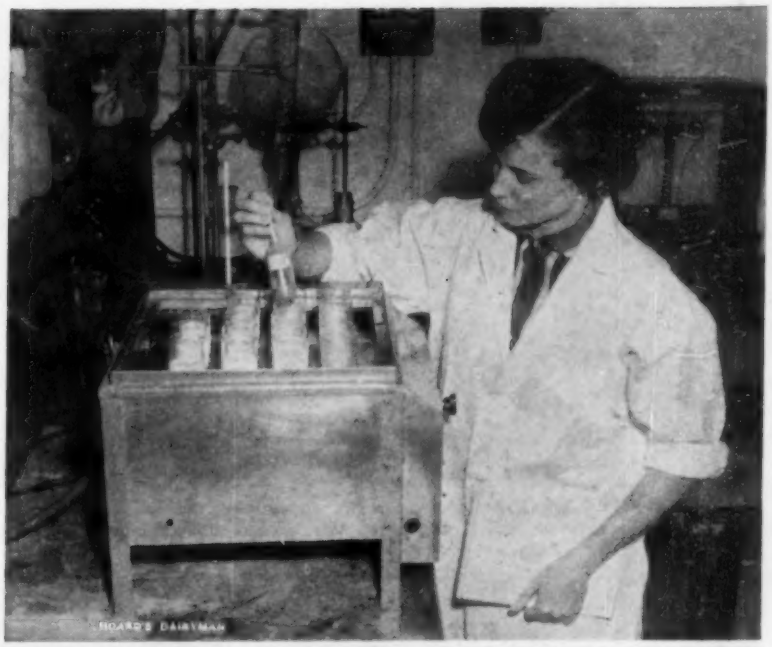
The hydraulic system should be drained when the oil is warm. Clean the iron particles from the magnetic drain plugs. Some of the systems have filters that must be cleaned or replaced at the time *(Turn to page 648)*

The author is assistant professor of agricultural engineering, University of Illinois.

You can prevent low milk solids

Be sure to feed plenty of high-quality hay while cows are on winter pasture; especially important in drought areas.

by James E. Johnston



MILK SOLIDS CONTENT is determined in laboratory by lactometer. In most cases, normal milk contains 12 to 15 per cent solid materials.

EACH year during the fall and winter, many dairymen and milk plants are faced with the problem of milk solids falling below the legal minimums established by state law. Many dairymen have been falsely accused of watering their milk as a result of these changes in its composition.

This article makes no attempt to excuse the few unethical dairymen who actually have added water. Such individuals should be identified and made to suffer the consequences of their actions. However, for the honest individuals whose milk fails to meet legal standards, the problem is very acute. We shall make an effort to explain some of the reasons for a lowering of milk solids and to outline some of the things which may be done to prevent such an occurrence.

Normal milk usually contains 12 to 15 per cent solid materials and the remaining 85 to 88 per cent consists of water. The solid portion usually is divided, for purposes of analysis and discussion, into butterfat and solids-not-fat (SNF) fractions.

The solids-not-fat portion consists of milk protein (mostly casein), milk sugar (lactose), and ash (calcium, phosphorous, salt, and other minerals). Each of these constituents can be determined very accurately in the laboratory, but such procedures are tedious and expensive.

For most purposes the fat is determined by the well-known Babcock test and the total solids are estimated using some form of lactometer. A lactometer is a device, made of glass, which is allowed to float in milk held at some specified temperature. It tends to sink deeper in milk high in total solids than in milk which is low in solids. Thus, the lactometer is used to detect milk to which water has been added. However, it behaves the same in milk which naturally is low in solids as it does in watered milk.

When a dairyman is suspected of watering his milk, another instrument known as a cryoscope sometimes is used as a check. The cryoscope is used to determine the temperature at which the milk will freeze. This test depends upon the fact that the materials dissolved in milk, particularly the sugar and minerals, cause it to freeze at a lower temperature than pure water. Thus, a high freezing point is indicative of a low mineral and sugar content which usually is the case where water has been added.

Causes of low solids . . .

Low solids in milk as it comes from the cow may be due to:

1. Low butterfat percentage;
2. Low solids-not-fat; or
3. Low butterfat and solids-not-fat.

The smaller breeds of cattle produce milk which is higher in both butterfat and SNF than the larger breeds. There are also variations among animals within these breeds in their ability to produce milk high in solids. Thus, some cows may, under the best conditions, produce milk which is near or even below legal minimums in some states.

The percentage of butterfat in the milk of an individual cow varies somewhat during the lactation. Usually, it is lowest when the cow is at her peak of production and tends to increase gradually as level of production falls.

Research studies in Texas, Florida, and Virginia have recently shown, however, that abnormally low butterfat percentage usually is due to a deficiency of long roughage. Increasing the amount of grain fed will not make up for the lack of roughage. In this case, the bacteria of the rumen are not able to produce enough of the raw materials which the cow's udder needs to manufacture fat. As a result, amount of fat produced falls and test drops.

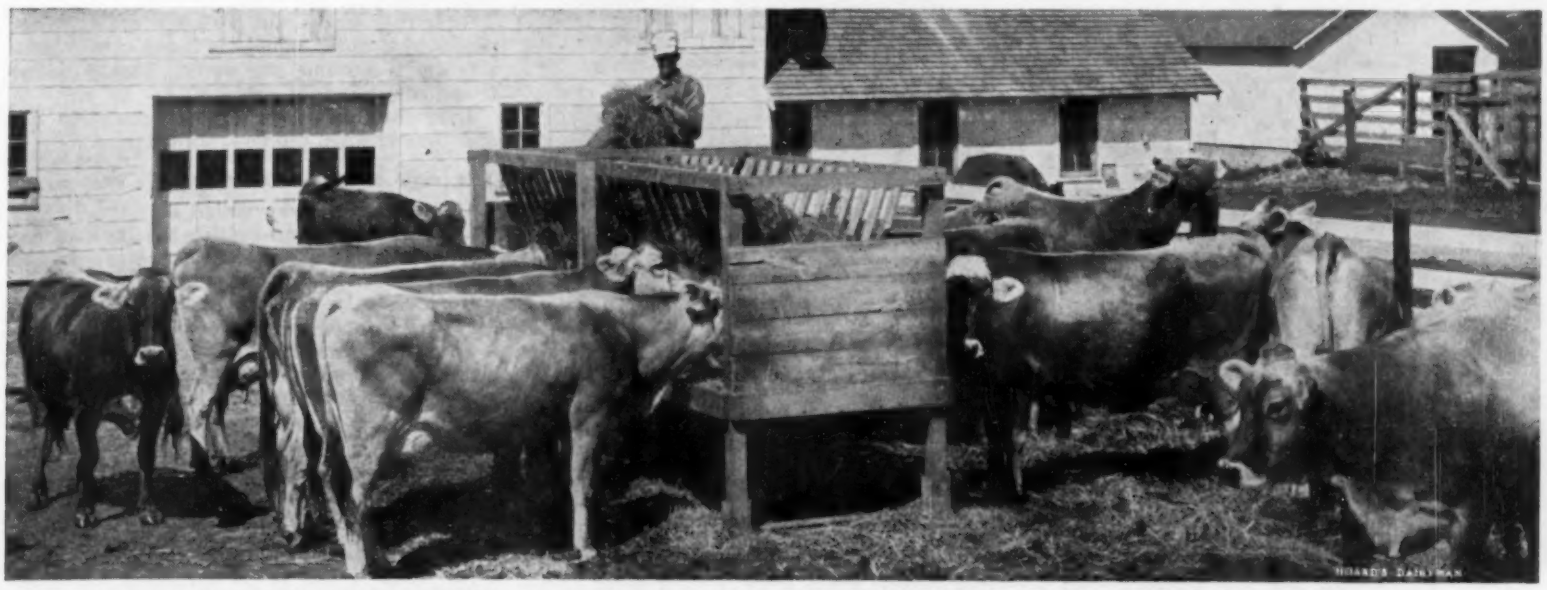
This condition also can result when ground hay is fed. In order to prevent it, the pieces of roughage must be at least two or three inches in length. Cases have been recorded where fat test has dropped below 1 per cent in cows fed only ground hay and grain.

Abnormally low solids-not-fat is usually due to a lack of digestible nutrients in the cow's ration. This happens in a number of ways.

The dairyman who has winter oats or wheat may feel that his cows are getting a good fill on pasture. Because of the very high water content of the crop, however, they may not be getting enough nutrients.

The winter-growing crops also have a laxative effect. The rapid *(Turn to page 673)*

The author is associate professor of dairying at Louisiana State University.



BEST SOLUTION to problem of low solids is to provide good-quality hay besides pasture. While silage is less effective, it may also be used.

MEANDERING BROOKS often are dry in summer when you need irrigation water. Owners downstream may be indifferent to its use except during a drought when you need it most.

FARM PONDS for both irrigation and fire protection can be filled with diffused water and used as you see fit. This particular farm pond was made with the aid of a bulldozer.

SWAMPS often are neglected sources of water. In most cases, there is no adverse claimant on this type of water source, so it may be used legally for irrigation purposes.

FLOOD FLOWS are like growing boys; they are never around when there is work to be done. Therefore, flood waters cannot be depended upon as a source of irrigation water.

Know your legal water rights

Such legal knowledge may save you from an unwise expenditure for irrigation equipment which you may not even be able to use.

by Fred Larson

IF YOU live in one of the western states that applies the doctrine of "prior appropriation," then you know this doctrine gives the oldest right-holder first use to water. In times of shortage, the latest right-holder is first to lose his right to water. There is more to it, of course, but that is the essence.

But you don't live in one of those states. You live in one of the 31 eastern or humid states and you want to irrigate. The chances are, too, that you have had your eye on a stream that flows by your place, or on a pond nearby, or even on the run-off in that diversion ditch on the back 40. You would like to capture this water to give the crops a drink during that hot, dry spell that you feel so certain is just around the corner.

See your lawyer . . .

Well, if this is you, the first thing you need to know is that a different doctrine, the common law doctrine of riparian rights, applies in your case and that it, too, is just a little different in each of the 31 states. You should see your lawyer before you get in too deep.

What does the doctrine of riparian rights do? Generally, it holds that each abutting property owner along the waterway has a right to have the water go by his place unimpaired as to quality and undiminished as to quantity except that each abutting owner can consume a reasonable amount for domestic and livestock use.

This rule works out well for mills, power plants, and most industries because they usually don't consume the water. They just use it and return it to the stream.

Irrigation, however, is a consumptive use and thus violates the riparian doctrine.

You may capture run-off water . . .

Under the above doctrine it is generally held that a landowner can capture for his own use so-called diffused waters. These are waters that have not as yet found their way into a watercourse. In other words, they are wandering aimlessly over the surface of the ground.

Over the years there have been some modifications in the various states of the above rules. No two are the same, so you really have to read up on it in your own state.

It is through special legislative acts that many municipalities and others get a right to use water, for instance. It is usually through specific statute that flood water can be captured for some specified use. *(Turn to page 668)*

The author is head of the engineering and watershed planning unit, Soil Conservation Service, Upper Darby, Pennsylvania.

Home deep freezer

. . . from your milk can cooler

Your old milk cooler can be converted to a practical freezer that will give many years of service.

by D. W. Bates

BEFORE making a conversion inspect the cabinet carefully for any breaks in the outer shell. A tight outer shell is necessary to prevent moisture from entering the cabinet, where it can damage the insulation over a period of time, and cause undue frost formation on the refrigeration coils.

Since the cabinets of milk coolers are designed for a type of operation where the temperature difference between the inside and the outside is considerably less than in the case of a home freezer, additional insulation is required if the unit is to operate efficiently.

It is suggested that up to four inches of mineral wool insulation, suitable for refrigeration units, be added to the bottom, two inches to the sides, and one inch to the top of the milk cooler cabinet.

To convert a top-opening milk can cooler to a home freezer, remove the entire top from the cabinet. After this remove the refrigeration coils.

Cut three pieces of 2x4 to a length equal to the inside width of the cooler. Place these on edge in the bottom, one against each end and one in the center. Fill the space up to the top of the 2x4's with mineral insulation. Then cover the insulation with a piece of ¾-inch plywood to form the bottom of the freezer.

Build cabinet liner . . .

The procedure for insulating the walls will depend on the specific type of cabinet. A liner must be made to form what will be the inside wall of the freezer. This usually can be done by attaching sheets of pegboard masonite of the proper size to 2x2 inch strips. The 2x2's act as spacers between the new wall and the inside wall of the cooler.

There should be no mechanical connection between the liner and the inside of the cooler, as this will puncture the metal wall of the cooler, destroying its value as a vapor barrier.

The liner must be built so that it fits snugly in the cabinet as the refrigeration coils will have to be attached to it later. Sheets of refrigeration insulation can be cut and placed between the 2x2 spacers. Do not use a vapor barrier between insulation and inside liner.

After the insulation of the walls is completed, a piece of chrome door trim should be used to cover the exposed insulation at the top of the liner.

To insulate the underside of the cover, make a light frame, one inch deep, which will just fit inside the liner in the cabinet. Fill this with insulation and attach it to the cover. It will be necessary to puncture the underside of the cover in doing this, so it is important that the outer shell of the cover be tight.

As soon as the insulation is completed, the refrigeration coils can be replaced. Additional coils likely will be necessary. Advice regarding the number of these should be obtained from a competent refrigeration service man.

Some alterations will have to be made to the refrigeration unit. This should be done by a qualfied service man.

The compressor and motor will have adequate capacity to operate without alteration.

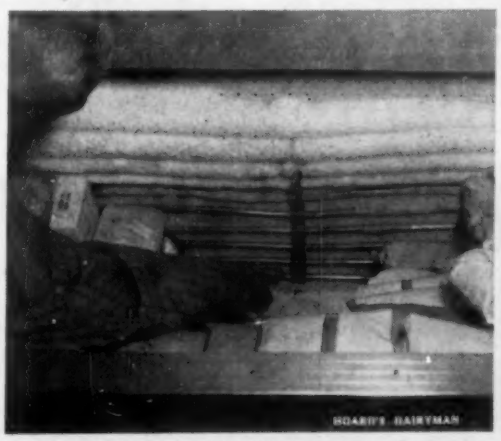
Units insulated as described can be operated at a cost which will compare favorably with that of a commercially-built freezer.

Side-opening coolers can be converted to freezers in the same general way as top-opening coolers. Adding insulation is somewhat more difficult, however, because of the more restricted space in which to work. In such a conversion the spraying unit should be permanently removed and only the refrigeration unit used.

THE END

The author is an extension agricultural engineer, University of Minnesota.

16-CUBIC-FOOT FREEZER was made out of a four-can, top-opening milk can cooler. Approximate cost of this cooler conversion was $100.



EXTRA REFRIGERATION coils may be necessary. Existing coils may have to be bent slightly to get them back inside the new cabinet liner.

NEW THERMOSTAT that can be set at temperatures of zero or below may be needed. Thermal fuses protect compressor motor from overheating.

TIGHT SEAL can be made by attaching rubber gasket to cover and to the top of cabinet. Note frame with extra insulation on underside of cover.

SPRING-LOADED HINGES are used on cover for easy lifting. Self-tightening refrigerator door latches are used to keep freezer closed tightly.

How to keep hydraulic system working

(Continued from page 644)

the oil is changed. Again, it is important to have the area around the filter clean. Filter gaskets should be checked and replaced if they are damaged or grooved. A new gasket will prevent oil leaks and help save oil and keep the tractor clean.

Oil to use . . .

Four types of oil are used in tractor hydraulic systems:

1. Engine oil
2. Automatic transmission (Type A) fluid
3. Straight mineral oil
4. Special oils sold by implement dealers.

Check your operator's manual to find out which of these oils is specified for your tractor. The additives in certain oils damage the seals and gaskets in some of the systems so it is best to use the type of oil that is specified in the manual. For the latest information on manufacturer's recommendation check with your implement dealer.

Check oil level . . .

During normal operation the oil level in the hydraulic system should be checked about once a week. Since the hydraulic oil is in a closed system you shouldn't have to add oil unless there are leaks in the cylinders or hoses. Leaks should be repaired at once since they not only waste oil but allow air to be sucked into the system and cause faulty operation.

The hydraulic oil level on most tractors is checked when the cylinders are retracted. Do not add fluid to the reservoir when remote single-acting cylinders are extended. Damage can occur if the level is checked at the wrong time and too much oil is added to the system. Check the manual to find the correct positions of controls and cylinders for oil level check on your tractor.

Bleed the system . . .

When the hydraulic system is drained or when additional remote cylinders are added it will be necessary to bleed the trapped air from the cylinders and hoses. A system that contains air is sluggish.

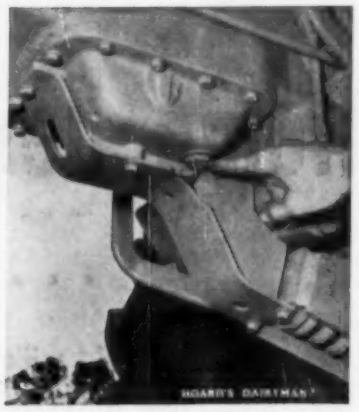
Air can be removed by moving the controls to operate the cylinder 8 or 10 times from a fully-retracted to a fully-extended position with no load. As this is being done the oil level should be checked and oil added as needed. Be sure that the funnels and containers are clean.

When cylinders and hoses are disconnected for the season, make it a habit to plug the ends of the hoses with clean ⅛-inch pipe caps. Extra lengths of hose can be kept clean inside by capping the ends or connecting the ends together with a ⅛-inch pipe fitting. Hoses will last longer if they are stored in a dry, cool place.

Adjusting implement drop . . .

Most tractors have a valve that you can adjust to regulate how fast the implement drops to the ground. This adjustment should be changed to accommodate implements of different type and weight. If a mounted implement bounces as it drops to the ground the oil is returning from the cylinder faster than it can be supplied to other side of piston.

PIPE CAPS, one-half inch in size, keep dirt out of hydraulic hoses when the machine is not in use.



MAGNETIC PLUG collects harmful metal particles. It should be cleaned when the oil is drained.

To make the implement drop smoothly, the valve should be adjusted to give a slower drop. For specialized implements, such as post hole diggers, a small metering valve is often installed in the line to give the correct rate of drop. For details on this, consult your manual or see your dealer.

Hydraulic troubles . . .

Repair of a hydraulic system is a job for a mechanic with lots of know how and special tools. A farmer should not attempt to dismantle a hydraulic system. Here are a few troubles that occur that you may be able to fix yourself.

Implement will not lift
Low oil supply.
The cylinder is overloaded.
Air in the cylinder.
The helper springs on the implement are not properly adjusted.
Breakaway coupling is not properly connected.

Implement will not drop or drops too slowly
Rate of drop valve is closed.
Helper springs are too tight.

Oil overheats
Low oil supply.
Relief valve is operating continuously due to overloaded cylinder.

Oil foams
Wrong type of oil is being used.

Noisy hydraulic pump
Oil viscosity is too high.
Low oil supply.
Air leak in system.

Only a qualified mechanic should try to remedy internal troubles.

Are you using your hydraulic system correctly and taking advantage of all the performance and convenience that the manufacturer built into it? Take the time to re-read the section in your operators' manual on hydraulic controls. You may find some new ways to use the controls that will save time and effort.

THE END

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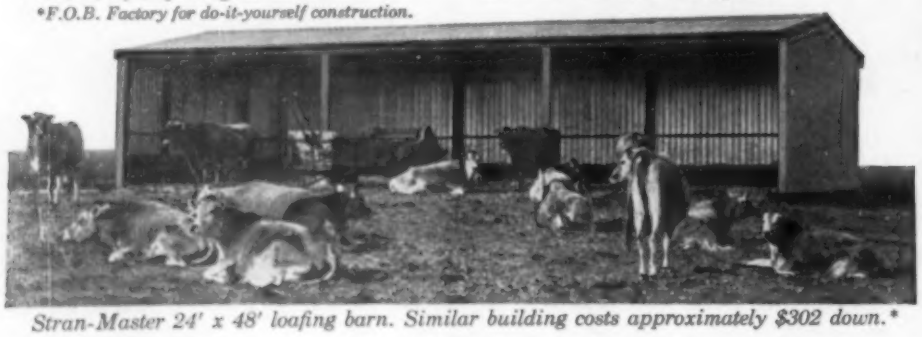

*Stran-Master 24' x 48' loafing barn. Similar building costs approximately $302 down.**

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DAIRY DIGEST

HUSTON JOINS NOBA

C. R. (Hap) Huston, manager of Franchester Farms in Ohio for the past 32 years, has joined the staff of Northern Ohio Breeders' Cooperative Association. He will be working primarily with the young sire program.

Born and raised on a Clark County, Ohio, farm, he graduated at Ohio State University, is past president of the Ohio Guernsey Breeders' Association, is a well known dairy cattle judge and has written several articles in Hoard's Dairyman.

POU TO ARIZONA

Dr. J. W. Pou, for the past five years head of the animal industry department at North Carolina State College, has been appointed director of the Arizona Agricultural Extension Service. He will assume his new duties on July 1.

Born and raised on a North Carolina dairy farm, he has served as a county agent, extension dairyman, and as head of the dairy department at the University of Maryland.

He received his PhD. from Cornell University.

Dr. Pou will succeed Charles U. Pickrell who will retire after serving in his present post for the past 21 years.

JERSEY PERSONNEL CHANGES

McGINNIS

CARROLL

Eugene E. Carroll, Jr., has been appointed field representative of The American Jersey Cattle Club in the northeastern states. He assumed his new duties May 16. Carroll has been dairy supervisor of Piedmont Research Station, Salisbury, N. C. In his new capacity he will serve the states of Connecticut, Delaware, Maine, Maryland, Massachusetts, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island, Vermont, and Virginia.

W. Charles McGinnis, who formerly was Jersey field representative in the northeast, has been appointed special representative of National All-Jersey, Inc., an affiliate of The American Jersey Cattle Club devoted to administering the national All-Jersey trademark program. Columbus, Ohio, is his new headquarters.

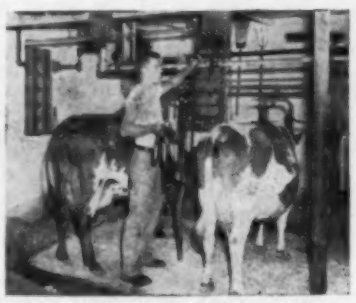
Gene Carroll will temporarily maintain his headquarters at Salem, Va., where his wife and two sons will reside. Later he will move to a more central location within the newly reorganized territory.

The man who was sitting on the bench pulled a watch out of one pocket, looked at it, put it back, and took another watch out of another pocket. He looked at the second watch and put it back. After he had done that three times, the man sitting next to him asked, "Are you doing scientific studies?"

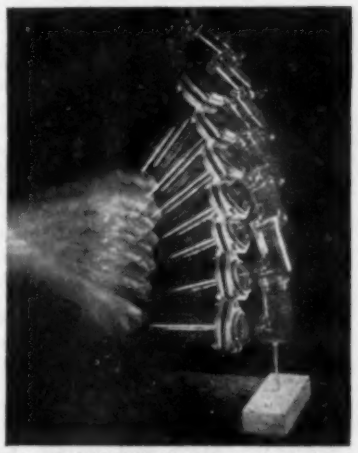
"Not at all," said the man. "I'm just checking the time. You see, the minute hand is missing on one watch, and the hour hand is missing on the other."

When you put in that pipeline milking system . . . remember

PYREX® pipe makes cleaning easier, lets you *see* when it's clean



Dirt can't hide behind glass! You can inspect every inch of your pipeline when it's a PYREX pipeline. You get visual control of quality. Cleaning is easier, faster, and more efficient.



"DOUBLE-TOUGH"—2½ times harder to break than ordinary glass. Yet, you can drive nails with it! This same rugged PYREX pipe has been used for over 25 years in the heavy chemical industries to carry dangerous acids and other chemicals.

And the thousands of dairymen who are already using PYREX pipelines enthusiastically report that breakage is no problem. They use their PYREX lines with complete confidence. You will, too.

Dirt can't hide behind glass.

That, in a nutshell, is why you will want to consider PYREX brand glass pipe, when you start planning a pipeline system for your barn.

Of course, you'll want the well-known advantages of a pipeline milking system: no pails to wash, replace, or lug back and forth to the milk house; less time spent milking; less exposure of the milk to flies and dust; lower bacteria counts.

A PYREX pipeline gives you all these —and more.

Easiest to clean—PYREX pipe is "smooth as glass"—because it *is* glass. This means there are none of the pits, grooves, and other irregularities commonly found in metal pipelines. There's *nothing* to cause build-up of milkstone or bacteria —just a liquid-smooth surface that washes easily.

And when you wash out a glass pipe, you can *see* it's clean!

Never grows old—50 years from now, your PYREX pipeline will still gleam after every cleaning. It never rusts, tarnishes, or changes color. Use any detergent or sterilizing agent you want —there's no danger of pitting or corroding the glass.

"JUST LIKE ADDING A NEW HAND—WITHOUT PAY!" *Says Richard Fullum, Manager of Old Bank Farm, Falls Village, Connecticut. This* PYREX *pipeline reduces the man-hours required for milking and clean-up, leaving more time free for other work. It has been in use for over five years—without a bit of trouble.*

GET *ALL* THE FACTS ABOUT A PYREX PIPELINE FOR YOUR BARN

Send for the booklet, "Know These Facts About PYREX Pipe." Simply write your name and address on the margin of this page, tear it out and mail to:

Dairy Pipe Department
Corning Glass Works
Corning, New York

Or call your local dealer representing:

DeLaval Separator Co. • Farmer Feeder Co. (Chore-Boy Division) • Hinman Milking Machine Co. • J. C. Marlow Milking Machine Co. • Rite-Way Dairy Farm Equipment Corporation • Perfection Manufacturing Corp. • and Universal Milking Machine Division.

MILK PURITY-PROTECTED with PYREX® GLASS PIPE

THE SIGN OF QUALITY . . . it can help *you*. When you put in your pipeline, make sure it's one that will never grow old. Get PYREX brand pipe.

CORNING GLASS WORKS, 27-6 Crystal Street, Corning, New York *Corning means research in Glass*

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Writes MR. JAMES A. ANDERSEN, Castle Rock, Colorado

"We are certainly well pleased with bulk handling and our Dari-Kool is doing such a marvelous job of cooling our milk. The operating cost is low and the service is wonderful. Our bulk program with Dari-Kool is more profitable — with less work — and makes milking a more pleasant occupation. We do not hesitate to recommend Dari-Kool with its ice bank cooling system."

(signed) James A. Andersen

Your best buy is a

DARI-KOOL
BULK MILK COOLER

The ICE-BANK Cooler that Outperforms and Outsells them all

Model shown DKS-200 (200 gallon capacity) Available in 100 to 1000 gallon capacities.

Send today for your **FREE MILKHOUSE PLAN KIT**

Dairy Equipment Co., Dept. 94, Madison, Wisconsin

Please send, without obligation, your new Milkhouse Plan kit.

Name.....

Address.....

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☐ I am a Dairy Farmer ☐ I am a Student

Plan your milkhouse with this easy-to-use kit. Includes graph sheets and scale model cutouts of milk coolers, water heaters, etc. Arrange to best fit your milkhouse plans.

These New Repellents

Keep Flies off Cows

MGK REPELLENT 11
(2, 3, 4, 5 bis [Δ_2 butylene] tetrahydrofurfural)

OR

MGK REPELLENT 326
(Di-n-propyl isocinchomeronate)

Fully registered for dairy spray use by the USDA

Thanks to a major scientific breakthrough, now you can keep flies *off* your cows. Repellents listed above drive away horn flies, stable flies, horse flies, gnats and mosquitoes. Flies are repelled both by the odor and by the "hot foot" they get if they land. They never get a chance to bite.

This means more money in your pocket. Leading entomologists say that just $18.00 spent for repellent sprays can bring you up to $250 worth of extra milk.

Dairy sprays with one or the other of the above repellents are available in most areas. CLIP THIS AD. MAKE SURE THE SPRAY YOU BUY CONTAINS EITHER MGK REPELLENT 11 OR 326. IT WILL PAY YOU.

MGK McLAUGHLIN GORMLEY KING Company

1715 S.E. Fifth Street, Minneapolis, Minn.
*For further information, write to the address above.

FEEDING

by N. N. Allen

Weeds cause feeding problems

Some cause off-flavored milk; others can poison animals. If cows don't eat weeds, they soon can take over pasture.

WEEDY corn fields usually do not produce heavy yields of corn. The good corn grower knows this, and is willing to spend time, money, and effort to control the weeds. He sprays and cultivates faithfully and is rewarded with increased yields, as well as the satisfaction that comes from seeing a nice clean field.

Sometimes we are not so conscious of the fact that a weedy pasture produces a poor yield. It may bring other problems as well.

Some weeds fair feed . . .

Most weeds have some feeding value; at least they contain nutrients that can be used for producing milk. As a matter of fact, some are pretty good feeds in the young, growing stages.

But there are good reasons for not wanting them in our pastures. For one thing, they are not good producers so they cut down on pasture returns. Then, most of them are not well liked by the cattle, and some cause off-flavors in the milk. There also are weeds which may poison animals.

In one way, it is fortunate that the cows do not like weeds. There would be a lot of off-flavored milk if cows liked all of the weeds as well as they like grass. There also would be a lot of sick or dead cows, but since the weeds do not taste good, they are left alone.

In another way, this is not so good. The cows eat the grass and leave the weeds. This gives the weeds a big advantage. If we don't watch out, they soon take over. They rob the grass of the plant food and water from the soil, and before we know it, we have a crop of weeds and little grass.

If the cows get hungry enough, they may start eating some of the weeds. The milk takes on the weedy flavors, and if the right kind of weeds are there, we may get sick cows.

Weeds in permanent pasture . .

Weeds are not a serious problem in our improved pastures grown on crop land where they are part of a crop rotation system. But there is still a lot of permanent pasture on land too rough for plowing. Or there may be some low, wet land. Such lands are not top-notch pasture land, but what else can be grown on them?

Properly handled, they will grow quite a bit of summer feed. And part of the proper management, along with fertilization, is weed control. Let's remember, the cows are working against us by keeping down the grass and letting the weeds grow. It is up to us to help the grass by checking the weeds.

If the land is not too rough for the tractor, mowing or clipping is still a good way. This not only gets the tall weeds, but it also clips back those tall bunches of grass that the cows skip because of manure spots or for reasons that only a cow understands. Spraying gets the low growing weeds as well as the tall ones, and it may be quicker and easier, particularly on rough ground.

The milk flavor problem . . .

Most of the weeds causing serious flavor problems are not eaten by the cows if there is plenty of good grass. But some of them such as wild onions or Frenchweed may grow right down among the grass so the cow cannot help getting them if she eats the grass. A little goes a long way in this case.

A few mouthfuls of onions eaten by a few cows in one herd may ruin a whole churning of butter, even though all of the rest of the cream in the churning was all right. In such a case, we must either get rid of the weeds or keep the cows off the pasture. It is more profitable to control weeds.

Some weeds are killers . . .

Then there are the poisonous weeds. The loco weed of the Western ranges is a well-known example. The loco weed is not found in most places, but wherever we live, we can find a few weeds that are harmful to cows eating them.

The white snakeroot is a good example. It is very common in fencerows or in poorly-managed pastures. If the cows eat the white snakeroot it is a bad actor. Not only may it cause "trembles" in the cows, but some of the poison may come through in the milk. This has occurred frequently enough that the poisoning in humans became known as milk sickness. If the cows liked it better, there would be a lot of trouble, but they eat it in dangerous amounts only if they get pretty hungry.

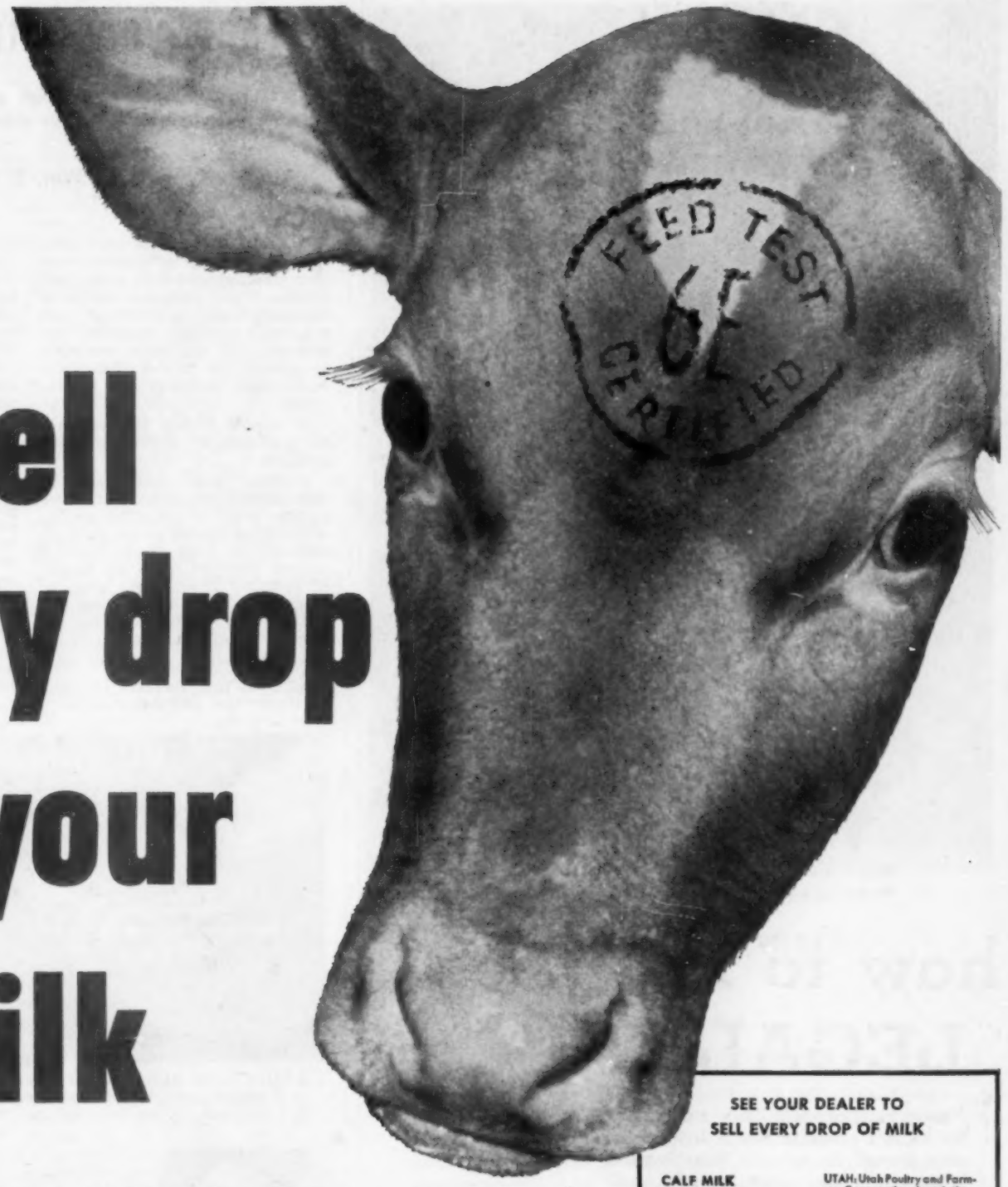
The water hemlock is very poisonous and we see it in many wet, wooded pastures. But it is very distasteful in cattle, so they leave it alone if there is plenty of grass.

A common woods fern covers many acres in which cows are grazing. If eaten in large amounts, the cows get sick and some of them may die.

In one section of Wisconsin, cows grazing lowland pastures have a very high percentage of abortions. Nitrates from weeds growing in the pastures are suspected of being responsible. Whether this proves to be the reason or not, controlling the weeds by spraying seems to prevent most of the abortions.

We could give a lot of other instances of trouble from pasture weeds. I know of no area that is completely free from such troubles.

Sometimes it may be hard to get rid of weeds in woodlands or swamps. Such pastures often do not produce much feed, and the best answer may be simply to fence the cattle out. On our good land we cannot get good yields of grass from a weedy pasture any more than we can get a big crop from a weedy corn field. The weeds can be kept down and it pays.



Sell every drop of your milk

Land O'Lakes Calf Milk Replacer switches calves immediately after colostrum, lets you sell all your valuable milk! Contains 10% added fats, 22% more calories—no cereals. It's a milk product!

If you sell fluid milk, you can now increase your base and boost milk profits the year around. If you sell only manufacturing milk, you can market every drop.

Simply switch your calves at 4 days to Land O'Lakes Calf Milk Replacer. Calf Milk Replacer takes calves off the milk you should be selling.

And remember this: Calf Milk Replacer is a *milk product*, not a milk substitute, so it cannot create a milk surplus. (Contains no cereals.) It is, however, fortified with vitamins, trace minerals, antibiotics. It does contain 10% added fats to give your calves 22% extra calories over and above maintenance. Extra calories for building extra weight, better hair coat and thriftier condition.

Yet, with all these advantages, you can feed Land O'Lakes Calf Milk Replacer for about $1.75 per hundredweight—far under the price of fluid milk. That's where your profit comes in!

Isn't it time you made the switch? It's as easy as walking into your Land O'Lakes dealer's and saying Calf Milk Replacer!

SEE YOUR DEALER TO SELL EVERY DROP OF MILK

CALF MILK REPLACER

ARIZONA: Southwest Cooperative Wholesale

CALIFORNIA: Poultry Producers of Central Calif.; San Joaquin Valley Poultry Producers Association

COLORADO: Denver Milk Producers, Inc.

IDAHO: Idaho Egg Producers

ILLINOIS: Illinois Milk Producers

IOWA: Land O'Lakes Dealers

MICHIGAN: Michigan Farm Bureau Services, Inc.

MINNESOTA: Land O' Lakes Dealers

NEBRASKA: Land O' Lakes Dealers

NORTH DAKOTA: All Land O' Lakes Dealers

OREGON: Pacific Supply Cooperative

SOUTH DAKOTA: All Land O' Lakes Dealers

TENNESSEE: Mid-South Milk Producers Association

TEXAS: Gulf Coast Federated Feed Association; North Texas Producers Association; Wichita Falls Area Milk Producers Association

UTAH: Utah Poultry and Farmers Cooperative Association

WASHINGTON: Washington Cooperative Farmers Association

WISCONSIN: Land O' Lakes Dealers; Wisconsin Farmco Service

WYOMING: Big Horn Cooperative Marketing Association

SOLD AS CALF MAKER IN

ALABAMA, FLORIDA, GEORGIA: The Cotton Producers Association

DELAWARE, KENTUCKY, MARYLAND, VIRGINIA, WEST VIRGINIA, TENNESSEE: Southern States Cooperative, Inc.

INDIANA: Indiana Farm Bureau Cooperative Association, Inc.

NORTH CAROLINA, SOUTH CAROLINA: Farmers Cooperative Exchange, Inc.

SOLD AS CALF NIP IN

MISSOURI: MFA Co-op Exchange

SOLD AS FELCO CALF DEVELOPER IN

IOWA: Farmers Elevator Service Co.

FEED TEST 6E CERTIFIED *Certified for switching calves at 4 days by Anoka Research Farms*

Land O'Lakes Calf Milk Replacer

LAND O'LAKES CREAMERIES, INC., MINNEAPOLIS 13, MINN.

Keep a broom and shovel handy if you plan to use Purina Fly Bait this summer. You'll need 'em to sweep up dead flies.

how to kill flies... LEGALLY

New regulations will likely make your fly control program just a little more complicated this summer. Exactly what is approved and what is prohibited?

Our suggestion is that you leave this problem to Purina Research people who developed the following products and program for 1958.

Barns, loafing sheds, milking area: Spray walls and ceilings with Purina Malathion Spray two or three times this summer. Sprinkle Purina Fly Bait on floors, window sills, partitions.

Cows: Spray daily or as needed with Purina Dairy Spray, using electric or hand sprayer. Same spray is ok for use in the milk room.

This simple plan works like a charm. And for extra convenience, your Purina Dealer will gladly deliver your fly season needs along with your next order of Purina Dairy Chows or Concentrates. Phone him now at the Store with the Checkerboard Sign.

FEED PURINA . . .
YOU CAN DEPEND ON THE CHECKERBOARD FOR QUALITY . . . SERVICE

When you paint concrete

Different types of concrete paints are being used as demand for color and decorative concrete grows.

by Wm. L. Roper

PORTLAND cement paint consists largely of Portland cement, ground with other materials. White Portland cement is ordinarily used. Limeproof and sunproof mineral pigments are ground with the other materials to produce the colored product. A wide range of colors can be obtained.

It is sold in dry powder form to be mixed with water before application.

Portland cement paint should be distinguished from other cold water paints. Many of the latter are referred to as cement paints although they contain little or no Portland cement and are made up largely of hydrated lime, casein, glue, or other materials. Some of these materials offer little resistance to weather or other adverse conditions and serve only as temporary color coatings when they are so exposed.

For outside use and locations subject to moisture, only paints which the manufacturer can definitely show to have satisfactory service records under similar conditions should be used.

Portland cement is easily applied and bonds with any properly-prepared concrete surface, concrete masonry, or Portland cement stucco, common brick, soft tile, limestone, or any other type of cement work having some absorption.

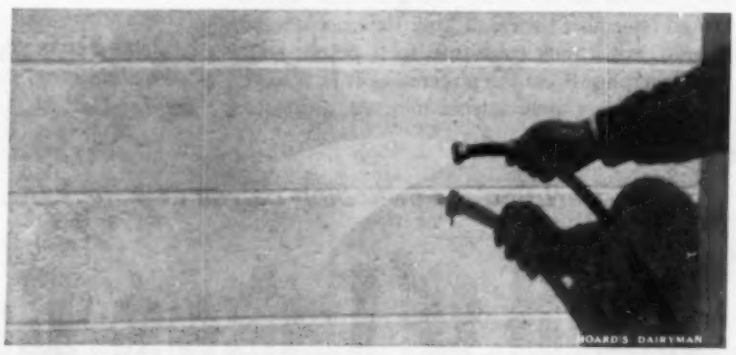
It is not recommended for application on wood or metal, enameled brick, vitrified or glazed brick or tile, surfaces saturated with oil or grease, nor on surfaces previously coated with oil paints, unless such paints are completely removed. It is not recommended for concrete floors except the floors of swimming pools, wading pools, ponds, and similar locations not subject to mechanical abrasion.

An outstanding advantage of

The author is an agricultural engineer for the Portland Cement Association.

DAMPENING SURFACE of concrete wall before each application of Portland cement paint helps make a tighter bond between paint and concrete. Garden hose with mist nozzle attachment may be used.

APPLYING PAINT to concrete wall with a scrubbing brush. This type of brush forces paint into pores of concrete surfaces.



CURE FIRST COAT of paint by keeping surface damp for at least 24 hours. This is done by spraying at the required intervals.

Portland cement paint is that it can be applied to masonry surfaces that are damp. In fact, all surfaces must be damp when the paint is applied.

Dust, oil, grease, efflorescence, or paints of the organic type must be removed completely from the surface to be painted. Traces of form oil can be removed with steel brushes, abrasive stones, or lye solutions.

Efflorescence usually can be removed from the concrete by wetting the surface and then scrubbing with a 20 per cent solution of muriatic acid. This should be followed with a rinsing of water. There is an advantage in delaying painting concrete to allow form oil to weather off and to check for signs of efflorescence, most of which will occur during the early age of the concrete.

Spraying of the concrete to make it uniformly damp before paint application is essential. A garden hose providing a fine spray is suitable. The surface should be sprayed several times, with a few minutes interval between each spraying to allow the moisture to soak into the concrete.

Follow directions . . .

Preparation of Portland cement paint powder by mixing with water should be followed in accordance with manufacturer's recommendations. A slightly thinner paint is suggested for the first coat so that it can be worked into the surface. Usually from 3¾ to 4¼ quarts of water to 10 pounds of the dry powder will make such a paint.

For the rich, creamy consistency used for the second coat, water should be reduced by one-half quart. It is good practice to add about one-half the estimated amount of water, thoroughly mixing to a stiff paste, then add water gradually until the desired consistency is obtained. Paint should be stirred frequently and will usually remain in usable condition for three or four hours after being prepared.

Spray gun application of Portland cement paint is satisfactory for decorative purposes, but tests of rain resistance of painted concrete masonry walls indicate that paint applied by spraying provides less protection than paint that is scrubbed on. It is, therefore, recommended only on dense concrete or on interior surfaces.

Keep surface damp . . .

After the first coat has hardened sufficiently to prevent injury to the surface, it should be cured by keeping the surface damp for at least 24 hours. This is done by spraying at required intervals. At least 24 hours should elapse between coats. The second coat should be moistened with a fine spray as soon as the paint has hardened sufficiently to prevent marring the surface. It should be kept damp at least two days. Insofar as practicable, painting should be done in the shade rather than in bright sunshine, especially during warm, windy weather.

BRUSHES used in the application of Portland cement paint should have short, stiff bristles.

Other paints used on concrete are largely organic. It is difficult to secure a good job with them where moisture may enter the concrete from behind. They form impermeable films which may be pushed off by the moisture.

The surface to be painted with organic paints should be carefully prepared. Oil, grease, and efflorescence should be removed. Old concrete should be wire-brushed or sandblasted lightly to remove dirt and loose particles. New concrete work should be given at least 8 to 10 weeks to dry after the moist curing period before the paint is applied.

When the concrete has dried thoroughly following the curing period, it should be given a neutralizing wash to prevent soap formation in the oils. A solution consisting of 3 ounces zinc chloride and 5 ounces of ortho-phosphoric acid (85 per cent phosphoric acid) per gallon of water may be used. After drying 24 to 28 hours, any dust on the surface should be brushed off but the surface should not be rewetted before applying the paint. This treatment is not necessary on old concrete or old Portland cement stucco.

After the neutralizing wash has dried, the concrete surface should be given a binding and suction-killing treatment, consisting of one or more coats of oil or varnish carrying some pigment. A suitable primer may be made by mixing 1 gallon of oil paint, ½ gallon of China wood oil spar varnish and 1 quart of turpentine or similar thinner. Special priming paints for concrete also are available.

The prime coats should be allowed to dry thoroughly, after which any of the organic paints can be applied in accordance with the manufacturer's directions.

Cement and oil paints . . .

Cement and oil paint is the general term used to include all paints made by grinding Portland cement and pigments in an oil vehicle. The vehicle may be linseed oil, a mixture of linseed and China wood oils, soybean oil, and other drying oils. These paints dry to a hard, flat finish somewhat rough to the touch. They adhere well to concrete and other masonry but are not recommended for floors. Fine silica sand is sometimes mixed with the final coat.

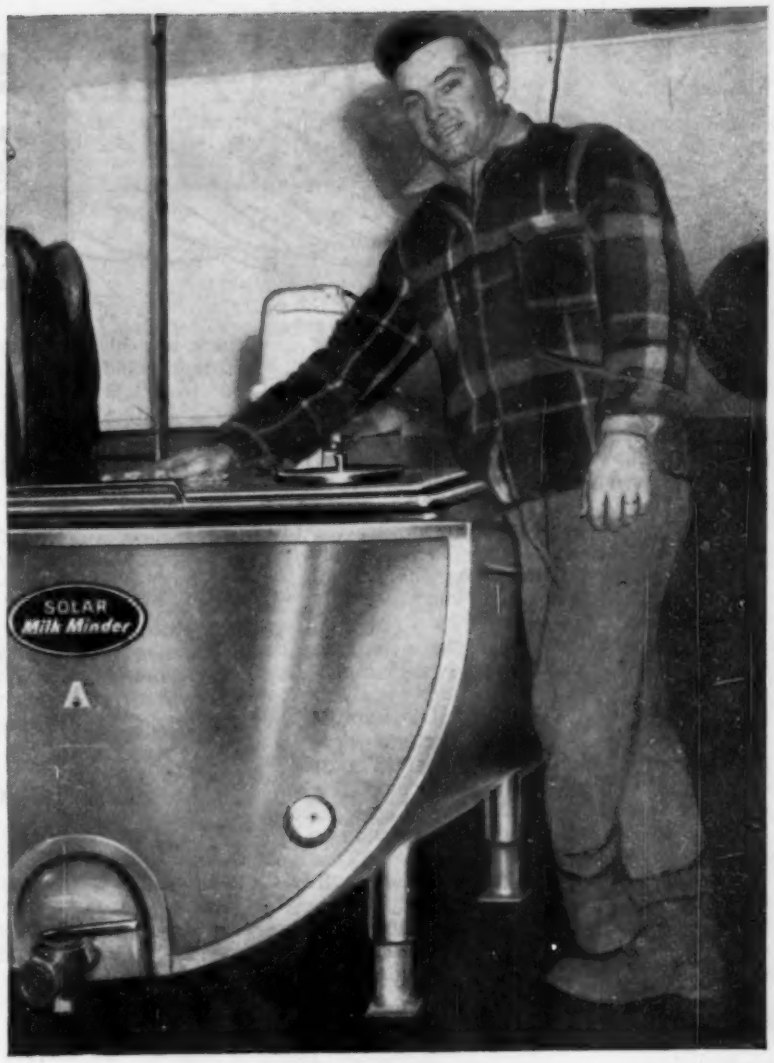
Oil paints . . .

There is a wide variety of oil paints and enamels made by grinding white lead in a vehicle such as linseed oil, and adding other pigments to produce color. Modern paints also are made from other pigments, for example, aluminum or zinc, and from oils other than linseed. In some cases, the pure metals instead of the oxides are used. Such paints made by reputable manufacturers are suitable for use on concrete, provided they are applied over properly prepared surfaces.

Special paints . . .

Many of the newer paints and lacquers consist of resins, gums, synthetic plastics, and a wide range of other materials dissolved in hydrocarbon or other suitable solvents. These paints should be used in accordance with the directions of the manufacturer.

Local paint and material dealers either have a stock of the paints required for concrete work or can obtain them, usually on short notice.



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says Ervin Van Strydonk of Harrison, Wisconsin

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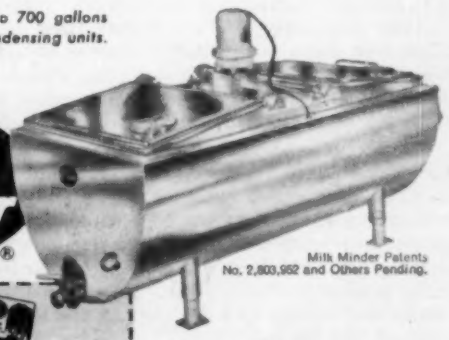

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MEETS A STANDARDS

EDITORIAL COMMENT

THE PLIGHT OF THE MIDWEST

WHILE perhaps few farmers in any area will agree the price of milk is high enough, it is true that dairy income in many regions is, obviously, quite satisfactory. This must be concluded as we admit that the most insistent demands for a new dairy program come out of the manufacturing milk areas of the upper Midwest. There is comparatively little agitation in other regions, although there are isolated pockets of discontent.

As reported in these columns a few months ago, there are many states where the Class I utilization of the milk supply is very high. As a result, the blend price is quite satisfactory. In other areas, state milk control, individual handler pools, and health restrictions serve to partially isolate the markets from outside cheaper milk. Certainly, in these areas we do not find the $2.75 per hundredweight prices received by manufacturing milk producers in many areas of the upper Midwest.

Next to manufacturing milk farmers, insofar as poorer prices are concerned, are those farmers in markets where market-wide pools are heavily influenced by a large supply of manufacturing milk in the immediate vicinity. The proximity of such a surplus, of course, has a heavily depressing effect in these pools.

As much as Midwest manufacturing milk producers may want and critically need a better price, their hope of getting it through a change in the national dairy program is not bright because, by and large, the representatives and senators in Congress are not sensing the demand for a change from dairy farmers in the East, the Southeast, and the West.

It is, of course, dangerous to generalize as we have because there are exceptions to these generalizations in all regions. After visiting with farmers in practically every area of the country, after listening to spokesmen from those areas at national farm and dairy organizations' conventions, and after talking with congressmen recently this measurement of sentiment repeats each time.

If our summary of sentiment is reasonably accurate, the manufacturing milk producer must look for some other way of improving his position than through the united and cooperative action of all dairymen throughout the country.

60 CENTS MORE PER HUNDRED

IF DAIRY farmers in New York state cut their hay early in June rather than in late June and early July, dairy income would be boosted by more than $60 million. This is the estimate of Cornell University dairyman, Kenneth Turk, and agronomist, Keith Kennedy.

In recent experiments, Cornell scientists divided cows into two groups, each about equal in milk production. For 20 weeks, one group was given early-July cut hay while the other group got early-June cut forage. The cows getting the late hay dropped significantly in milk production each week. At the end of 20 weeks the output had dropped to about 60 per cent of the second group.

Later these cows were switched abruptly to early forage and each cow almost doubled her production in five weeks. Turk and Kennedy said the early-cut hay actually boosted production from cows whose output had been declining rapidly near the end of their lactations.

Since the Cornell investigators estimate there are 50,000 dairy farmers in New York state, the $60 million in added income averages out to $1,200 per farm.

On a hundredweight basis, New York state dairy farmers produce approximately 100 million hundredweight. The increased value of the added milk could be said to represent approximately 60 cents per hundred from the simple practice of cutting forage early and getting it up when it is high in protein and low in fiber.

It is freely admitted that an increased milk flow would mean more milk going into surplus production and a lower average return per hundredweight, but the basic point remains: There is a tremendous financial gain in getting hay off in the early bud stage.

HOW LONG IT TAKES

IT IS said we are making tremendous strides in dairying today. We are adopting, quickly and widely, the best in dairy farm management practices. Undoubtedly it is true that our degree of advancement has been accelerated in the past decade. On the other hand, it is interesting to reflect on how long it has taken for many of our soundest practices to catch on.

Alfalfa was carried by the Persians into Greece with the invasion by Xerxes in 490 B.C. In this country, it was grown by Presidents Washington and Jefferson on their respective farms. Over a hundred years later, however, W. D. Hoard, founder of this magazine, was ridiculed by his neighbors as he planted and grew alfalfa successfully on his farm. This took place 60 years ago and yet today we have thousands and thousands of farmers who have yet to try alfalfa, preferring instead to get along with short-lived legumes.

Grass silage was used during the early history of the Baltic countries in Europe. The first published report of the use of grass silage came out of Italy in 1786, or 172 years ago. A hundred years later, in 1886, Stephen Favill, a close personal friend of W. D. Hoard, spoke highly of grass silage when he addressed the annual convention of the Wisconsin Dairymen's Association in Richland Center, Wis. And, yet, today many farmers think grass silage is an innovation, something new.

It was 54 years ago that the second editor of Hoard's Dairyman, A. J. Glover, first tested a group of dairy herds for milk production. This was in northern Illinois and was the forerunner of the first organized D.H.I.A. established by Helmer Rabild in Michigan in 1905, 53 years ago. And, yet, today, only one dairy cow in 10 is being tested for milk production!

Yes, we have come a long way in dairying, but we still have a long way to go before all farms are using effectively all of the profit-making tools available to them.

In 1916, W. D. Hoard said:

Some men have ideas; other men have notions. How easy it is to mistake one for the other. The man who is guided by notions in farming is very apt to cling to them very persistently.

It is a delight always to listen to a farmer who has thought things out to their logical conclusion and who has had the courage to trust his course to the guidance of sound ideas.

PLANT MARGIN VS. FARM INCOME

A REAL sticky problem exists in some of our dairy cooperatives. We have felt its presence for a long time. Because it is difficult to solve, we have not previously commented on it. A recent incident is so graphic, however, we relate it here to illustrate the problem.

Surrounding a city, which we will call "Metropolis," dairy farmers organized a bargaining cooperative to represent them in negotiating prices for their Grade A milk. A few miles away, in a small town, another group of dairy farmers, producing manufacturing milk, operated a cooperative creamery.

On the Metropolis market the farmers received $5.05 for that portion of their milk going into Class I (for bottling purposes). The remainder of their milk went into manufacturing use and brought $3.25.

At the manufacturing plant, in the neighboring town, all milk sold for $3.25, the manufacturing price.

When Metropolis had a surplus of Grade A milk it had the choice of either sending the milk out of the area into Class I usage in a neighboring market (which was in short supply), or shipping it to the neighboring cooperative plant which would pay only $3.25.

When the leaders of the bargaining cooperative chose to ship the surplus to the higher price market, the leaders of the processing cooperative complained bitterly because this milk going through the processing plant would net the plant 25 cents per hundredweight.

Actually, we cannot be critical of the processing cooperative for wanting greater volume. Certainly the operation of the processing cooperative would show up more favorably at the end of the year with a greater flow of milk through it.

Providing the processing cooperative would continue to operate regardless of where the milk was shipped, however, the action of the bargaining cooperative was sound.

But here we see illustrated a conflict in motives. In one case, dairy cooperative leaders were concerned primarily with income to their members. In the other case, the leaders were concerned primarily with the plant operating statement, and secondarily with dairy farmer income.

The issue here is not quite as bald as it may appear in print. The continued operation of efficient dairy processing cooperative plants serves the long-range interest of dairy farmers. On occasion, it may be necessary to sacrifice short-range financial gains for long-range guarantees of a market and effective plant competition.

And dairymen should not be too critical of processing cooperative spokesmen who may take a policy position identical to that of proprietary processors. In truth, they often are employed as good plant operators. Their measured success and their resulting compensation depends on their demonstrated efficiency. With such motivation their policy recommendations with reference to farm programs and industry programs understandably contribute first to better plant operations.

It is up to the dairy farmer members of the boards of directors to make certain that the policy decisions and positions of the cooperative serve the best financial interests of dairy farmers.

Questions from Our Readers

Pole-type stanchion barn

Please send me some pointers on building a pole-type stanchion dairy barn. How do they work out? Will creosoted poles last in cement footings or foundation?

In basement-type, two-story, pole stanchion barns, what would be the best kind of covering to hold a clay earthen wall from crumbling?

Wisconsin F. B. R.

A pole-type stanchion dairy barn will not prove to be satisfactory unless it is insulated. The walls should have an insulating value equal to at least three inches of wood and the ceiling should have the equivalent of six inches of dry shavings. Unless insulation is provided, it will be practically impossible to keep livestock confined in it during cold weather because of excessive humidity.

Well-treated poles will last as long in concrete as they will in earth. The most suitable wall for the basement part would be one of masonry or concrete.

I would question the advisability of trying to build a two-story dairy barn out of poles. It would be worth your while to check carefully the cost of materials for such a building against the cost of materials for a building of standard frame construction.

—D. W. Bates

Sewer gas in house

I put in a bathroom and septic tank system this summer. The septic tank has a capacity of 1,000 gallons and drains into a ditch 300 feet from the house. There are traps at all the drains in the house and a vent through the roof, but sewer gas seems to enter the house. Can you figure out what is wrong?

The vent pipe is 1½ inches in diameter and 9 feet long. It comes out under an overhanging roof on a higher part of the house. It that what is wrong?

Minnesota A. C. H.

You are correct in your assumption. If the vent pipe is partially obstructed by a roof a short distance above it, the sewer gas cannot escape properly. Sewer gas is heavier than air and, unless carried away by the wind or air currents, will settle to the ground. Some of it is likely to enter the house. Another possibility is that the vent is plugged. In this case you would hear an occasional gurgling sound from the toilet or sinks.

In either event the vent pipe should be extended through the overhanging roof.

—D. W. Bates

Buy seeder-packer?

About this time of year after seeding 125 acres of alfalfa and alfalfa and brome, I become interested in better ways of seeding (faster, greater accuracy, less seed required, and better stands).

The method I now use is to broadcast the seed and then cultipack after the oats have been disked and harrowed.

During a period of 16 years I have never failed to get a stand, and perhaps this is due in part to the use of phosphorus. However, the difficulty in broadcasting brome, even though I mix 3 bushels of oats per 100 pounds, leaves much to be desired.

Can the cost of a seeder-packer be justified? Perhaps they, too, have their drawbacks which are not apparent until used.

Iowa D. W. J.

The method of seeding alfalfa-brome which you have developed is the same type of planting practice you would follow if you were using a packer-seeder. You state that you sow an oats-brome mixture directly on the oats seeding which has been disked and harrowed. Then you use a cultipacker to cover the grass-legume seed lightly.

According to our agronomy department, the best depth of seeding for grasses and legumes is from just under the surface to a depth not greater than one-half inch. At this shallow depth, you will have a higher percentage of germination and emergence. If these seeds were disked in, many of them would be so deep they would be literally buried alive. Disking and harrowing, even lightly, grass-legume seedings have resulted in such poor emergence, farmers have, in general, exceeded the amounts of seed needed to get a good stand.

Actually many farmers plant from three to five times as much alfalfa seed as is needed to get a good stand.

If you feel that you would save enough seed by reducing seeding rates using a cultipacker-seeder, you could justify purchasing and owning this type of equipment. If you seed 125 acres of alfalfa and alfalfa-brome each year, there is the possibility that you can quite handily justify owning at least some type of attachment to go on your existing cultipacker.

Now, I might mention one thing about packer-seeders. Usually they do their best job on tilled ground. By tilled land I mean land which has been plowed and perhaps leveled with a harrow. Don't be concerned about the tractor wheel tracks showing after the packer-seeder has gone over the area. You will find that is an area where you will get some of your best stands.

Remember, too, that a roller has a tendency to pick up soil and become solid if the land is slightly damp. In other words, with a packer-seeder, you need nearly ideal conditions.

Actually, if you are getting good stands with your present system, I doubt whether you would gain much except having a nicer operation.

—Dale O. Hull

Covered holding area

We are building a loose housing setup for 30 cows and would like your opinion regarding the use of a covered holding area to give the cows protection while waiting to go into the milking parlor.

Iowa J. J.

Some operators prefer a covered holding area; others do not. I know of dairymen who have a covered holding area but do not use it, but I don't know of a case where a dairyman who started with an open holding area ever put a roof on it.

It is important to have a holding area, covered or not, which has a concrete floor and which can be cleaned easily.

Sometime ago I asked a dairyman who had an open holding area if he intended to build a roof over it. He replied, "If the cows are outside all day eating, I don't know why it is necessary to have a roof over them for 20 or 30 minutes before they are milked."

—D. W. Bates

Hens eat eggs

I have a problem with our hens eating the eggs they lay. I have box-type nests well-packed with litter.

Kentucky W. D.

When hens eat eggs it is usually because their vice has become a habit and not because they are not getting the right kind of feed.

The vice probably got started when one egg was broken accidentally. Perhaps some hen was laying a thin-shelled egg that could be broken easily. The hens learned that eggs were good feed. Probably some one hen found out that she could break an egg by pecking it and then she could have the pleasure of eating the good egg itself. She made a habit of it. It is likely that other birds learned from the first offender.

Egg eating can get started from a number of different reasons but once the habit is formed it is one of the most persistent and the hardest to break of all bad habits of chickens.

I know of nothing that you can feed your hens to correct it.

Making the nests dark sometimes helps but usually does not work 100 per cent by any means. It will, however, be worth a trial to hang sacks or a canvas around nests so as to make them dark.

Frequent gathering of the eggs also may help to hold down your losses. By frequent gathering in this case I mean every half or three-quarters of an hour. The hens cannot break eggs if the eggs aren't there.

Your box-type nests probably did not cause the egg eating to get started but the use of rollaway-type nests in the future may go far toward preventing a recurrence of the trouble. By rollaway-type nests I am referring to the kind that have the sloping wire bottom so constructed that the eggs will roll away from the hens as soon as they are laid and into a covered trough in front of the nest.

It may be that just one or two hens in your flock are causing all the trouble. Watch carefully to see if you can find the one or two birds that may be pecking the eggs in the first place to break them. Getting those few birds out of the flock may possibly solve the trouble for you.

—Joe W. Sicer

To keep out green scum

We need assistance to determine what to put in a supply tank to keep that green, slimy fungus from forming. After all winter's use this green stuff formed in our water supply tank. (We have lived here 10 years and this is the first time it has bothered.)

We cleaned it out well and in less than three weeks it was worse than before. I use the water at the barn and milk house, so am really frantic about this situation. We asked our druggist about it and he said to use blue vitrol, but that is not too safe for anything to drink.

Iowa Mrs. R. A. V.

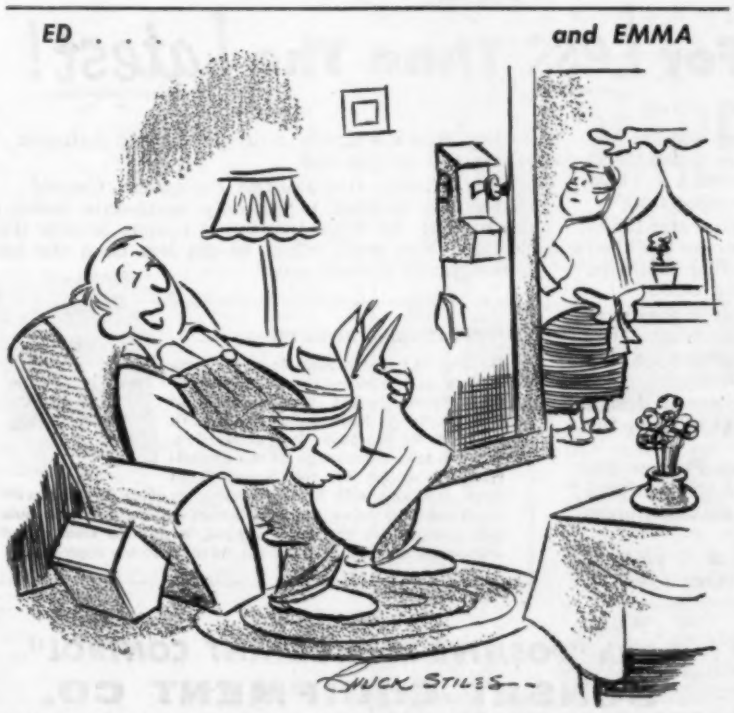
Your druggist was correct in recommending blue vitrol (copper sulfate) to control the algae growth in your water supply tank. Copper sulfate is frequently used in municipal surface water supplies for the same purpose at the rate of one part per million by weight (8.4 pounds of copper sulfate per million gallons of water which is equivalent to about ⅛-of an ounce per 1,000 gallons of water). Give your druggist either the dimensions of the tank or the quantity it holds.

I would suggest that you clean the tank again before adding the copper sulfate since the decaying algae will cause water to smell.

Re-treat as necessary. A tight cover over the tank to keep out sunlight will stop the algae growth since they need sunlight for growth just like other plants.

Copper sulfate is poisonous, but not in the quantity recommended. The killing dosage for larger animals is about 1 ounce per 100 pounds of weight. So at the dosage you will be using, an animal weighing 100 pounds would have to drink 8,000 gallons of water in a short period to be killed.

—Ted L. Willrich



"Since when does my arms getting tired have anything to do with me needing glasses?"

Be ready to irrigate when rain stops

(Continued from page 643)

ation should become so critical that we were willing to weigh a good diet against recreation.

Many areas in the Lake states have a very adequate ground water supply. This supply falls into two categories, water which is fairly close to the surface of the ground (10 to 30 feet) and can be pumped with equipment at ground level or in shallow pits, and water at a greater depth that requires deep well pumps with pumping parts submerged below the water level (turbine pumps).

In the shallow-well areas, water frequently is obtained by digging a large pit 10 to 20 feet deep, 50 to 100 feet wide, and 100 to 200 feet long. Usually, these pits are constructed as close as possible to the field to be irrigated to save on the cost of the irrigation system. They are built with power shovels, drag lines, and so forth, and are moderately expensive. These pits have been quite successful, if the excavation is carried to about 6 to 10 feet below the water table.

Some repair is necessary from time to time. Heavy pumping produces some draw down and some sloughing off of pit sides. They are rather unsightly and may be a hazard to children and livestock. There is also a chance of contamination. However, the location and rate of pumping are such that contamination is not yet a problem.

In many irrigated areas, shallow wells have proved practical. They are quite inexpensive and either can be put in with conventional well drilling equipment or can be put in by the jetting process with equipment used for irrigation.

One advantage in shallow wells is that a farmer can start on a small scale, and as his operation increases, he can develop more wells. From 1 to 10 or 12 can be hooked up to a header line.

The material for a shallow well is relatively inexpensive ($40 for each 80 gallons per minute capacity) and can be salvaged and moved to a new location, if so desired. Priming of irrigation pumps on shallow wells has been a problem, but new self-priming irrigation pumps are now available to overcome this difficulty.

Deep well pumps (turbine type), while used extensively in the West are only in limited use for irrigation in the Midwest.

Both the deep well and the pump itself are quite expensive, sometimes costing more than the land to be irrigated, and, thus, financing may be a problem. However, in such cases where it is definite that irrigation is to be a permanent operation, these pumps are proving to be both efficient and trouble-free and an excellent investment over a long-term operation.

A type of drilling equipment, rather new to this area but in common use in the West, is being used to quickly establish somewhat deeper wells in the area where previously pits and shallow wells have been used. They are constructed by boring a large (30- to 36-inch) diameter well with a rotary drill. A deep well-type screen and casing are inserted which is one-third to one-half the diameter of the original bore. Gravel is packed into the balance of the space around the screen. A conventional deep well turbine pump is then installed. Constructed in this manner, a well essentially has the capacity of a large deep well at the expense of only the smaller casing and screen.

The present cost of these wells and pumping equipment is comparable to pits and pit-type pumps. The upkeep cost should be well under that of a pit. Other objectionable pit features also would be eliminated. If left open at any time, these wells will be extremely dangerous.

Permits required . . .

In Wisconsin, both shallow and deep wells are under the jurisdiction of the State Board of Health, and any well with suitable capacity for irrigation requires a permit. The primary reason for controlling the installation of irrigation wells is to prevent possible interference with a municipal water supply.

Investment is rather high . . .

The cost of owning an irrigation system is rather high. A fair-sized pump and engine may run around $2,000 to $2,500, and a short main and distribution system another $2,000 to $3,000. However, with this equipment and a lot of hard work you can irrigate 40 to 80 acres, depending on how the land lays and how many hours a day you want to work.

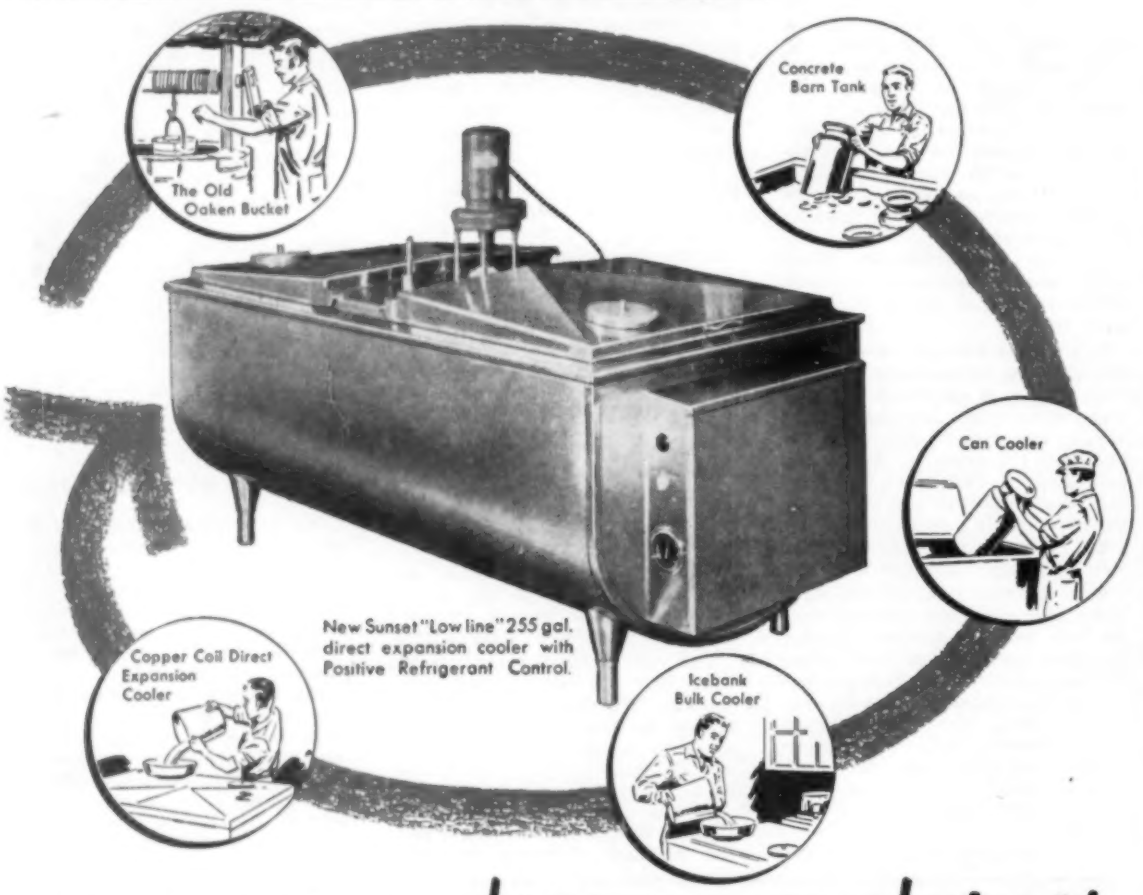
The life of a pumping engine usually is less than 5 years. A centrifugal pump may last 10 years without extensive overhauling and irrigation pipe may last 10 to 15 years, if carefully handled.

Costs of irrigation equipment, supplies, and labor have been increasing like everything else. A fairly simple rule of thumb which probably has not fallen too far behind inflation is to figure that the annual irrigation cost per acre is about $15 plus $2 per inch of water applied. The $15 should take care of depreciation, interest, taxes, and so forth, while the $2 covers the cost of fuel, oil, and labor for moving the pipe.

We cannot irrigate all over and there are many areas and crops that it will not pay to irrigate, but if you take a ride through many areas of your state in late June or July, you will see irrigation in full swing. It seems to be paying off!

THE END

Milk Cooling...1908-1958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Can Cooler
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Copper Coil Direct Expansion Cooler
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Don't Settle For *Less* Than The *Latest*!

Milk cooling methods have come a long way in the last 50 years. Remember when farmers cooled their cream cans by lowering them into the well . . . how "modern" you felt with your concrete cooling tank?

But as milk standards tightened, the old water tanks weren't good enough. So progressive farmers installed can coolers. Then, with new bulk handling methods, many farmers purchased ice-bank cooling tanks

About that time, professional refrigeration engineers were brought into the picture. They developed the copper coil direct expansion cooling system—a big improvement over the old ice-bank method.

And today, farmers can buy an advanced design direct expansion system that is far ahead of even the copper coil coolers.

This new system is SUNSET'S exclusive *Positive Refrigerant Control*, developed by engineers at Whirlpool Corporation, one of the world's largest manufacturers of high quality refrigeration equipment.

SUNSET'S *Positive Refrigerant Control* is so efficient that it cools milk for *half* the cost of other types of coolers. And it's simple in design, easy to maintain . . . practically trouble-free.

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SWINE

by F. J. Giesler

Buy protein feeds wisely

Compare the cost per unit of protein for low-cost gain. Provide plenty of feed and water facilities.

TOO few hog growers take full advantage of pastures in reducing production costs. Practically every Midwest experiment station has evidence indicating there can be considerable savings in feed costs through the use of good pasture.

While additional protein needs to be provided for hogs, every effort should be made to get the most for the money. Hogs can convert protein into the necessary carbohydrates, but they cannot reverse this process and make up protein needs from carbohydrates.

Actually, there are three rather important considerations you must consider when buying protein wisely. These are cost of the protein per unit, the quality of the protein available, and the non-protein nutritional factors. We can determine the value of protein feeds by examining each of these factors.

Protein cost per unit . . .

Quite often, we get in a rut when purchasing protein feeds because we become acquainted with one kind of feed or another, and we do not take the time to figure out whether some other feed can be purchased at a lower cost and still provide the feed value we need to get the job done on our hogs.

The following table can be used to illustrate the wide variation in cost of a unit of protein in feeds:

Item	Per cent total protein	Price/ton	Relative cost index per unit of protein
Cottonseed meal	44	84.00	190
Fish meal	60	170.00	283
Flour midds	18	74.00	411
Linseed meal	33	76.00	230
Soybean meal	44	76.00	172
Tankage	60	120.00	200

An easy way for you to make a comparison on the basis of comparing cost index per unit of protein in the feed is to divide the price per ton by the per cent of protein, which gives you the figure which is shown as a relative **cost index per unit of protein.**

Using tankage as an example, you would divide $120, the cost per ton, by 60, the per cent of protein, which will give you the index figure of 200. This is the relative cost per unit of protein in the feed.

In this case, soybean meal is the best protein buy, followed by tankage. Feeds such as flour midds, which are low in protein, are at a disadvantage in comparison of cost per unit of protein. However, they have considerable value in their carbohydrate content.

Protein quality . . .

Single protein feeds often vary in quality as well as quantity. Quality protein is important for young pigs and brood sows. Recommendations are generally made to mix or blend two or three single proteins together to improve the over-all protein quality. This is done because there is a difference in the amino acid make-up of plant and animal protein; and, consequently, a mixture of these kinds of protein gives you a higher quality protein feed.

As a rule, pigs show a remarkable ability to balance their own rations in protein content when they are self-fed corn or other low protein grains. At early ages, they eat enough protein supplement to balance their ration and then gradually eat a smaller proportion of the supplement as they grow older and their protein requirements are lower.

Non-protein factor . . .

Today many feed companies provide hog breeders with protein concentrates that are liberally fortified with vitamins and other nutrients. These supplemental factors vary in amounts and value.

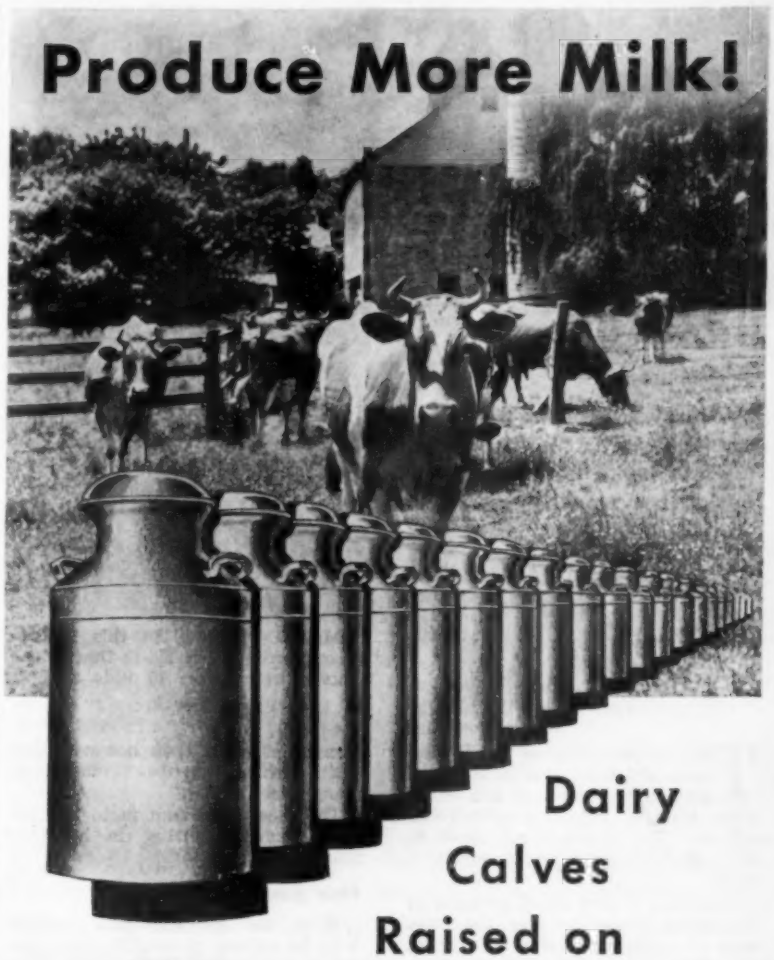
In general, most young pigs and chronically sick pigs may benefit from such fortification. However, it usually does not pay to buy such extras with the protein. Especially is this true when protein is to be used for market hogs weighing more than 100 to 125 pounds or if the hogs are on excellent pasture or have available milk products.

Often, slow gains are the result of providing too little feeder space. As young pigs grow, added feeder space should definitely be provided for them. Troughs that are too short for the number of growing and finishing pigs often result in unevenness among the group.

Hogs should be provided with one foot of feeder space for each three to four pigs. Where free-choice feeding is practiced on pasture, one-fourth of the feeder space should be allotted for protein supplement. Clean, fresh water is always a must. Allowing one drinking cup for each 15 to 20 pigs will give you added insurance that your pigs will make efficient gains and reach market weight earlier.

A backwoods community had a reputation for not keeping its ministers more than three or four months. Finally, the bishop sent a young preacher, and after two whole years he was still on the job. Surprised, the preacher pressed the board for an explanation.

When he could avoid it no longer, the chairman explained: "Well, I'd rather not tell you but, if you insist, here's the reason — we folks out here don't really want any preacher a'tall, and you're the closest we've come to it."



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Saltrazine also contains a special palatizing agent and animals like it, whether fed free choice or mixed in regular rations.

Feed Saltrazine to all dairy calves and heifers until freshening; switch to Hardy Trace Mineral Salt during lactation; feed Saltrazine to dry cows.

When fed to beef cattle and sheep, it increases daily gain and cuts feeding costs.

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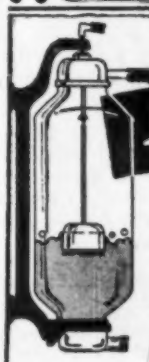

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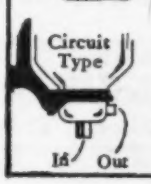
Large capacity vacuum-operated washer that draws in and discharges washing solution through the milk line or teat-cup assemblies. In-place cleaning eliminates disassembly of milker equipment after each milking to save you time and money. All parts contacting the solution are of bacteria-free stainless steel and heat-resistant glass. EASY TO INSTALL—just attach to your present pipeline system.



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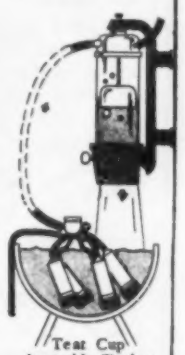

Reduce 2,4-D drift hazards

More care in applying this chemical will lessen the number of lawsuits and help to prevent future laws against its use.

by F. W. Slife

TOMATO PLANTS in this patch were injured from 2,4-D that was sprayed in a ditch 40 rods away.

THE introduction of 2,4-D has done much to control some of our major weeds. It has, however, brought on some undesirable effects. The greatest of these is drift of 2,4-D onto nearby sensitive crops.

This was a very small problem in the early years because the only way of applying it was with large sprayers that deliver 100 or more gallons of solution per acre. With the introduction of the low-volume sprayer in about 1946, however, the drift problem has been magnified many times.

The most important factor in the drift hazard is during the application process.

Fine particles drift . . .

With the sprayers that deliver 5 to 10 gallons of solution per acre there are many, many very fine particles. With only a very slight wind, these can be carried for many thousands of feet, and there are authentic cases in the cotton-belt area where severe damage has been caused to cotton as far away as 10 miles from the point of application.

The problem of 2,4-D drift has been so serious in some states that laws have now been initiated to prevent its use. In some other areas other restrictions have been applied.

The use of 2,4-D has increased steadily over the past 10 years and is today our most important weed chemical. It would be extremely unfortunate if a few use it indiscriminately and bring about more laws that restrict its use.

Follow these rules . . .

There are a few good rules to follow that will help reduce the amount of 2,4-D drift.

1. **Do not use 2,4-D close to sensitive plants.** Many of our crop plants are easily damaged by 2,4-D drift. Soybeans and other legumes such as the clovers and alfalfa can be damaged. These crops are not extremely sensitive, but yields can be reduced when 2,4-D drifts on to them.

Crops such as cotton, tomatoes, and grapes are super sensitive to 2,4-D drift. A very small amount of 2,4-D can ruin the entire harvest of these crops. Many of the horticultural crops such as cantaloupes, cucumbers, and pumpkins are easily injured or killed with 2,4-D drift.

Do not use 2,4-D near fields of cotton, tomatoes, grapes, or vine crops.

2. **Check neighbors' fields before spraying.** Your neighbor may have a tomato patch or melon patch close to your field and it takes only a few minutes to call him and find out.

3. **Don't spray on windy days.** Practically all of the damage caused by 2,4-D drift comes from the application process. A strong wind will carry the fine particles many hundreds of feet.

4. **Use the right formulation.** There are now three major types of 2,4-D available. They are the amine, volatile ester, and low volatile ester. The low volatile ester was introduced for brush control, but it also is being used for weed control in crops. The high volatile esters (methyl, ethyl, butyl, isopropyl, amyl) can form a vapor after application that will cause serious damage to sensitive crops. For this reason, they should not be used in certain areas. The amines and low volatile esters form very little vapor after application.

The author is an associate professor of crop production, University of Illinois.

Don'ts for fishing safety

Don't change seats in a boat or canoe. This is one of the major causes of boating accidents.

Don't overload your boat; know its capacity.

Don't venture out on lakes or ponds in bad weather; larger lakes can be treacherous in a wind.

Don't stand up in a boat. Learn to cast from a sitting position, and when in a boat remain seated.

Don't fish from slippery rocks or logs. Avoid the slippery ones if you must step on rocks and logs. Move about slowly and always look before you step.

Don't wade streams carelessly. Always be sure you have enough backing on your reel to cope with the sprints of fish, but, in any case, don't chase them downstream.

Don't land fish carelessly. Always be careful of a hooked fish.

Don't side-cast near another person. Overhead is the only safe way when another person is near.

Don't wander off into strange waters. If you don't know the waters, hire a guide; it's his job to know them. Darkness blots out familiar landmarks, so don't stay out after dark.

When you go BULK . . . go to the BEST . . .

One in a series of Ads

CRAFT cools milk at average cost of two cents per cwt. or less ...FASTEST COOLING...AT LOWEST POWER COST

According to independent tests*, CRAFT cools milk faster . . . at *considerably less cost* than five other leading makes. Your saving on power alone can amount to a substantial sum over a period of time.

This power cost economy is due to the fact that only a small compressor is needed to build CRAFT's giant ice bank. And the compressor can be timed to operate and build up the ice bank between milking periods, during the "off-peak" power load period. The only power consumed during actual milking period is the small amount required to operate the agitator; and the water pump, which circulates CRAFT's PATENTED "JET-FLOW" of 33 degree ice water.

CRAFT is economical in other ways also. Maintenance is practically negligible because *all* components are simple, of highest quality and exhaustively tested. Service, too, is fast, convenient and economical since only two electrical controls are needed to operate a CRAFT, and these are instantly accessible.

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RUGGED CONSTRUCTION of self-feeding wagon allows for rough, daily use. The stall partitions on sides reduce waste to a minimum.

Wagon rack for self-feeding

Hauling pasture is simplified with this wagon. A 16-foot rack will take care of 35 to 42 cows.

by Orrin I. Berge

MANY cows are not going to pasture anymore. The pasture is, in fact, coming to them. In recent years, there has been a rapid increase in the practice of chopping the pasture once or twice daily and hauling it to a lot.

The wagon rack plan shown here was developed at the Marshfield Experiment Station in Wisconsin. It is completely self-feeding, substantial, and relatively easy to build. The side stakes act as stall partitions and are important in reducing waste to a minimum. The doors are important for reducing waste when filling the rack.

Rack length . . .

The length of the rack depends on the number of cattle to be fed. One feed opening for every 2½ head is best and there should not be more than 3 head per opening. Here is the length needed for different size herds:

No. of cows	Rack length
30 - 36	14 feet
35 - 42	16 feet
40 - 48	18 feet
45 - 54	20 feet

Rack width . . .

The size of the animals determines the width. Cows should be able to reach the center of the rack. Here is the recommended floor width for three sizes of cows.

Cow size	Rack width
Large cows	6 ft. 8 in.
Medium cows	6 ft. 2 in.
Small cows	5 ft. 8 in.

To withstand daily use over rough farm roads at high speed and with heavy loads, the wagon should be ruggedly constructed. Therefore, all principal connections and joints are bolted. Put washers under the heads and nuts of all machine bolts and under the nuts of carriage bolts.

Endgates and door boards should be nailed to the cleats with nails long enough to clinch.

A floor made of planks will last several times longer than a board floor. The planks should be spaced slightly to allow for swelling.

It is highly recommended that all wood pieces be treated with a solution of pentachlorophenol before assembly. This will reduce rotting and the surface can be painted. Avoid paints containing lead; they are poisonous to cattle.

Rack plan . . .

The basic plan shows a rack 14 feet long and 6 feet, 8 inches wide, which is suitable for 30 to 36 large cows. If different dimensions are desired, several parts will have to be changed. The plan includes a bill of materials and instructions for making the rack in 16-, 18-, and 20-foot lengths, and three widths of each.

Editor's Note: For specific instructions on how to build this self-feeding wagon rack, write to Hoard's Dairyman Plan Service for Special Bulletin Number 5, "Wagon Rack for Self-Feeding." This bulletin contains 12 pages of drawings, specifications, and bills of materials for racks 14, 16, 18, and 20 feet long, with three widths for each, 6 feet, 8 inches; 6 feet, 2 inches; and 5 feet, 8 inches.

The author is an extension agricultural engineer, University of Wisconsin.

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3. Stimulation of the udder and teats prior to milking by wiping them vigorously with a warm solution of water and a reliable disinfectant. After drying them a period of approximately one minute should elapse before applying the rinsed and disinfected teat cups.
4. Milk about two streams from each teat into strip cup just before applying milker. This opens and lubricates the milk canal and allows inspection for abnormal milk.
5. Gentle regularity in the milking, feeding and handling procedures accompanied by adequate stall room and bedding.
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Ayrshire breeders meet

Hahn re-elected president; Doris Chadburn wins Distinguished Service Award; Grand Nat'l. averages $743.

MORE than 300 Ayrshire breeders and friends from 26 states and Canada attended the 83rd annual convention of the Ayrshire Breeders' Association. The meeting and Grand National Sale were held at Jackson's Mill 4-H Camp at Weston, West Virginia, May 4 to 7.

Walter J. Hahn, Frederick, Md., was re-elected to a second term as president. Other officers elected were Robert L. Knight, Hope, R. I., 1st vice-president; Jordan Atwood, Orwell, Vt.; Dr. E. C. Deubler, Newton, Pa.; and Philip Schuyler, Cobleskill, N. Y., vice-presidents. The following directors were elected: Frank Kimball, Concord, N. H.; Henry Barlow, Wassaid, N. Y.; George Cushing, Riegelsville, Pa.; Glen Stocksdale, Fort Recovery, Ohio; G. J. Page, Algonquin, Ill.; and G. Fred Williams, Hutchinson, Kans.

A panel discussion highlighted the convention program. The discussion, "Value of breed improvement programs in merchandising purebred dairy cattle" was moderated by Professor I. D. Porterfield, West Virginia University. Convention guests saw the well known Reymann Memorial Ayrshire herd at Morgantown as well as a Carnation milk plant.

Pertinent facts concerned with the association's activities during 1957 are presented in the table below. In his first report as Executive Secretary, David Gibson, Jr., emphasized that from 1940 to 1957 Ayrshires have made a 282 per cent gain in the 11 southern states from Virginia south to Florida and west to the Mississippi River.

The 1958 Distinguished Service Award was presented to Miss Doris Chadburn, office manager of the national headquarters at Brandon, Vt., who has devoted 30 years of service to the Ayrshire breed.

The Grand National Ayrshire Sale was held at Jackson's Mill on the day following the annual meeting. Under the management of Bill Carpenter, Rutherfordton, N. C., and sponsored by the National Ayrshire Association, 32 animals grossed $23,790, for an average of $743.

The top price was $2,200, paid by William Carney, Galney Farm, Dansville, N. Y., for Lippitt Thorny Lass, consigned by Robert Knight, Lippitt Farm, Hope, R. I. The top selling bull was Mackayr Ruper 2nd, consigned by Frank McDonald and Son, Princeton, Ill., and purchased by West Unity Ayrshire Farms, West Unity, Ohio, for $1,200. An open heifer, Jon-Ell Grand Abbie 4th, consigned by John Knipp and Sons, Lindsey, Ohio, was purchased by Dr. R. A. Broady, Sevierville, Tenn., for $1,500.

	1956	1957	(+ or —)
Female registrations	19,309	17,597	—
Male registrations	1,856	1,641	—
Total registrations	21,165	19,238	—
Registrations from artificial breeding	5,257	5,451	+
Per cent of total from artificial breeding	24.8	28.3	+
Total transfers	14,219	13,745	—
New members	116	117	+
Total membership	9,336	9,453	+
Herds on herd test	544	502	—
Cows on herd test	14,617	13,092	—
pounds milk per cow	9,583	9,695	+
per cent fat	4.13	4.12	—
pounds fat	395	398	+
Herds over 500 pounds fat	13	9	—
Herds classified	100	70	—
Cows classified	2,501	1,882	—
Income	$174,708.64	$159,008.82	—
Expenses	177,327.57	169,962.23	—
Net loss	790.37	5,777.58	+
Assets	218,711.80	226,320.23	+
Liabilities	15,392.46	9,735.30	—
Surplus	200,764.64	196,912.78	—

DIRECTORS AND OFFICERS attending the annual banquet were, left to right: Seated in front row, J. A. McConnell, Ohio; J. F. Atwood, Vt.; R. L. Knight, R. I., first vice-president; W. J. Hahn, Md., president; Dr. E. C. Deubler, Pa., vice-president; C. Nairn, Pa. Second row: D. Gibson, Jr., Vt., executive secretary; P. Schuyler, N. Y., vice-president; H. W. Clark, Md.; G. J. Page, Ill., E. R. Hanner, Calif.; H. Klingle, Ohio; H. N. Barlow, N. Y.; G. Stocksdale, Ind.; P. Davenport, Conn.; V. M. Hawkins, Jr., Vt. Pictured in third row: G. Cushing, Pa.; G. F. Williams, Kans.; G. A. Bowling, N. Y.; F. Kimball, N. H.; C. Clapp, Tenn; and J. Keas, Kans.

"I have some advice for you!"

(Continued from page 639)

averaged 12,600 pounds milk and 440 pounds fat.

We rented additional land on a long term lease to enlarge the business. In 1953 we grew 60 acres of wheat, 45 of corn, 35 of oats, and 15 of winter barley besides plenty of mixed alfalfa hay and improved rotational pastures. Since Dad lived 50 miles away and was fully employed elsewhere, I operated the farm with the help of a hired man and some extra summer assistance.

With the barns and granaries overflowing and the two silos about to be filled, fate called me from the fields to wrestle with polio.

Long term respiratory polio presented many problems. As soon as I was feeling well enough in the iron lung, we were faced with a most difficult decision: What happens to the farm? Relatives and friends had pitched in to help my hired man sow 43 acres of wheat, fill the silos, pick the corn, and tuck the farm in for the winter. After consulting with doctors, we decided to sell the milking cows at public auction that fall and the remaining stock and equipment at a second sale the following spring.

This was the final blow to all my hopes. Although parting with my black and white friends broke my heart, we did have the satisfaction of selling the registered cows for the respectable average of $440. My favorite cow sold for $1,050, far above my highest expectations.

After the second auction in the spring of 1954, Dad and I dissolved a happy and successful father and son partnership. I bought out his interest in the farm and rented it to a cash crop farmer for the next two years.

In the meantime, the March of Dimes had transferred me to the Buffalo Polio Respirator Center where severe polio cases receive the best of care and rehabilitation. David, our fourth child and third son, was born that spring. I think his arrival gave me an extra impetus since it was at the time I had my tracheotomy removed.

I was fully weaned from the iron lung to a chest respirator and I began to breathe a few minutes unassisted. This breathing I refer to is called "frog breathing," since air is literally gulped into the lungs in small quantities. I have now developed this so I can go without any breathing aid for several hours.

Along with this improved progress let me say that my muscle return was nil except for feeble movements in my fingers. It was enough, however, to permit me to type with the aid of overhead bars and slings, an electric typewriter, and a wheel chair. This one simple procedure has opened up a whole new world of farm journalism since my return home in May of 1955, after almost two years spent in hospitals.

Back to dairying again . . .

The country looked awfully good to me but my farm had changed. I didn't enjoy seeing the fields empty of grazing cattle nor the luxurious growth of weeds along the neglected fence rows. The barns were sadly in need of repair. For the good of the farm we needed a dairyman.

We reserved two small meadows near the buildings for our own use. Good friends sold me several open heifers, to keep the grass down in these fields and for me to watch them graze and grow into money. In a year's time we owned a dozen well-bred animals. My three older children, Roger, Candace, and Steven took care of them through the winter and did a fine job.

A year ago we found just the man for the farm. In an unusual agreement, he allows me to keep 10 head of young stock which he houses and feeds. We receive free milk for the house besides a modest cash rental. Later on, we worked out a cow rental agreement so that his herd size would be more efficient and would give us another opportunity to increase our income by renting him cows.

Many friends advised us to sell the farm but where would we go or where would we be as happy? Where is there a better place to raise our four children, to teach them responsibility and the love of nature, than right here on the farm?

The income from our farm resources has gone a long way in keeping us independent. I doubt if we could keep the family together without it. We are deeply indebted to our farm.

I spend my waking hours managing our personal financial matters, reading a lot about agriculture and related problems, studying the stock market and sports for a hobby, and typing.

The Batavia Daily News, a county-wide daily newspaper, runs a weekly column written by me about farm problems and how they affect the community. The New York State Holstein News often lets me editorialize about dairy philosophy in their monthly publication.

I have assisted our County Farm Bureau on publicity work as well as my church and individual friends. Correspondence with my many friends also keeps me busy.

It should hardly be necessary to say that living in an immobile state, depending upon artificial aids for your next breath is a difficult adjustment for a man to make in his 30's. What would I give to be able to hold my wife in my arms again? Or my children? What would it be worth to have my boys help me with the farm chores or to take them to the store for an ice cream cone? What does a pebble feel like when it sneaks into the shoe as one walks across a plowed field?

Who knows the hundreds of times I silently cry, longing for the little taken-for-granted pleasures of life? Only I know these answers.

Salk vaccine arrived too late to help me but it is here to protect you. There is no excuse for paralytic polio today except wanton carelessness. Don't jeopardize your future and that of your family and friends by ignoring Salk vaccination. A series of three shots is simple insurance. Polio-living is not fun! **THE END**

Britain places ban on Belgium's butter

A temporary ban has been placed on the import of Belgian butter into Britain, where the public is enjoying a glut of cheap butter. The British Government acted after reports that 1,000 tons of Belgian surplus butter stocks were being offered to the British market at 21 cents a pound.

Reports from Brussels indicate that the difference between this price and the retail price in Belgium of 77 to 84 cents a pound, would be made up to exporters out of an agricultural fund set up by the Belgian Government.

The cheaper butter in Britain at 28 cents a pound, cost less than some brands of margarine. The best butter sells for about 42 cents.

—The New York Times

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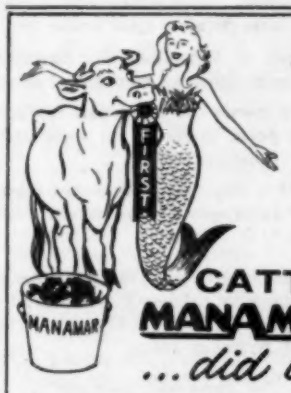

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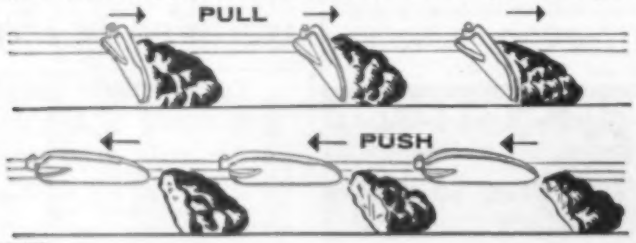

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Oat silage or corn silage . . .

(Continued from page 641)

straw are hollow and if they get too ripe they can trap enough air to spoil the ensiling process. If too green, a lot of juice is squeezed out.

Dexter sums up the situation this way: "It's silly in most cases to put up oat silage for winter feeding when cornstalks will be left in the field because the silo is full. Sure you get more total digestible nutrients from the oat silage than from just the grain, but you don't have to buy bedding when the crop is harvested as grain. Also, a corn silage outyields oat silage in the corn belt."

How do they compare?

How does oat silage stack up to corn silage in feed lot trials? Charles Lassiter, dairy researcher at the Michigan agricultural experiment station, has the answer after comparing the performance of cows on the two silages for two years. The researcher emphasizes that the study was designed only to find the relative feeding value of the two roughages. "All we wanted to know was which of the two silages was the better dairy feed and how much better," he says.

Lassiter got at the relative feeding value of corn and oat silage with two milk production trials, two digestion trials and one growth study with dairy heifers in 1956 and 1957.

In addition to either the corn or oat silage, all cows got good quality alfalfa hay plus a simple grain ration to supply needed protein.

In both years, the scientist reports that oat silage contained slightly more crude protein and crude fiber than the corn silage. Digestion trials in both years indicate that oat silage was a slightly lower T.D.N. feed than corn silage, probably due to the higher crude fiber content, Lassiter says.

In the first milk production trial, with silage making up about 60 per cent of the total roughage intake, the researcher found very little difference between the two silages with respect to butterfat test. Cows on oat silage produced slightly more milk and gained more in body weight than those fed corn silage. "This may have been due to a slightly higher rate of oat silage consumption," Lassiter feels.

During the second year trial, with silage making up 77 per cent of the total roughage intake, cows on corn silage did a bit better than animals on oat silage. Cows on oat silage produced less milk, gained less in body weight.

The average daily production of 4 per cent (fat corrected) milk during the last seven days of each period for cows fed corn silage was 28.4 pounds as compared to 26.7 pounds for cows fed oat silage. Stretch this difference over an average winter silage feeding season of 250 days and it can amount to around 425 pounds of milk.

Less oat silage consumed . . .

"The difference in milk production appears to be due to a lower consumption of oat silage dry matter," Lassiter believes. Cows getting oat silage consumed 18.3 pounds of silage dry matter as compared to 20.8 pounds for cows fed corn silage. "Oat silage did not appear to be as appetizing as corn silage when fed at the higher level in the second trial," the researcher concludes.

In digestion trials, corn silage averaged 64 per cent total digestible nutrients, 4 per cent more than oat silage. Oat silage was slightly higher in protein and crude fiber but over-all it is not as good a feed as corn silage, Lassiter feels.

Growth studies indicate that oat silage is a poor feed for growing heifers. Heifers on oat silage gained only about half as much as heifers on corn silage. The researcher believes there is more to the explanation than just the fact that the heifers took in a little less dry matter with the oat silage.

Dairy specialists advise that silage should not make up more than about 50 to 55 per cent of the total roughage dry matter. Cows on a high silage diet just don't do well. They don't get enough dry matter via the silage.

Feeding silage, or even hay, to dairy cows grazing **top quality** grass-legume pastures doesn't pay anyway, according to tests at Michigan State. If your pastures fit this blue-ribbon category, you may not need to worry about summer feeding of silage. But where grazing conditions are less favorable, adding silage or hay to the ration may help keep milk production up and stave off the usual late summer drop. **THE END**

N.D.A. elects Doornink

At the National Dairymen's Association's first annual meeting in Chicago May 26, John Doornink (Baldwin, Wis.) was elected president to succeed Arthur J. Gude (Alstead, New Hamp.). Gerald Thies (Milaca, Minn.) was elected vice-president to succeed Sam Bailo (South Lyon, Mich.). Joe F. Nelson (Fond du Lac, Wis.) was elected secretary-treasurer succeeding John Gurtner (Cumberland, Wis.).

Other newly elected directors were Henry Zart (Fennimore, Wis.) and Glen C. Eickenberry (Denver, Ind.).

The new president, John Doornink, is a prominent Wisconsin dairyman and breeder of registered Holsteins. His 230-acre farm near Baldwin is stocked with 80 registered head. The 35 cows on test last year averaged 562 pounds butterfat on D.H.I.A. and 616 pounds butterfat on herd improvement registry test.

A resolution from Minnesota's N.D.A. regional meeting was unanimously adopted by the national delegate body:

WHEREAS, N.D.A. is inherently dedicated to a solution of the problems of dairy marketing and recognizes the accomplishments of farm organizations on all levels, the sincerity of their efforts and the need of our drawing upon their experience, talents, and cooperation in accomplishing our objective;

BE IT RESOLVED, That we work in harmony with existing farm organizations, cooperatives, and producer groups;

BE IT FURTHER RESOLVED, That N.D.A. members retain their memberships in other farm organizations, thereby keeping their organizations strong so that overall farm interests will be safeguarded in our legislative bodies.

The N.D.A. is sponsoring HR-12053, a bill now before Congress. It calls for a constructed cost of production formula to price milk at the farm level.

National headquarters of the new organization are at 7042 West Higgins Avenue, Chicago 31, Illinois.

Fats supply about 44 per cent of the calories in American household foods.

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ARTIFICIAL BREEDING

Canadian Angus service cut

Follow U. S. breed policy to save bull sales. One-third of Canadian services and one-tenth U. S. are from beef bulls.

by H. A. Herman

IN ONTARIO, and generally throughout Canada, about one-third of the artificial insemination service is to beef bulls. This service has included many registered animals because all Canadian beef registry associations, except Herefords, have permitted registration on the same plan as used in dairy herds.

In February 1958, however, the Canadian Aberdeen-Angus Association took this action:

". . . beginning January 1, 1959, no calves born in Canada as a result of artificial insemination [will] be accepted for registration unless the owner of the dam at time of service is one of not more than three co-owners of the sire."

The above statement is almost identical to that adopted and now enforced by every beef registry association in America. The Canadian artificial breeding units are, of course, disappointed by this action. Many have heavy investments in outstanding Angus bulls.

One Canadian artificial breeding association manager says, "It is obvious that this ruling was put through because A. I. was proving too much competition and spoiling a few bull sales for the top breeders. If they honestly think they have done this for the good of the breed, their action is justifiable. We, personally, do not think it justifiable to discriminate against the small breeder."

Gains in U. S. beef herds . . .

This action in Canada comes at a time when artificial breeding in beef circles in America is on the upgrade. More and more artificial breeding organizations in the United States are adding "performance tested" sires of the beef breeds.

In 1957 there were 256 strictly beef bulls maintained in 38 of the 75 bull studs in America. This is about 10 per cent of all bulls kept by organized artificial breeding associations. Beef sire services accounted for about 10 per cent, or 600,000 cows, of over six million serviced in 1957.

Most of these beef bull services were to low-grade dairy cattle and first-calf heifers. Some were to strictly beef cattle in the smaller herds. Bull studs in America find they must provide beef bull service for some of their patrons.

At the Stockmen's Short Course, Pullman, Wash., last December, we found an audience of over 300 livestock raisers enthusiastic about the possibilities artificial breeding gave for getting a better calf crop and reducing the spread of venereal disease throughout the herd. Many were using the program and found it practical where cattle could be confined to small areas during the breeding season.

One beef breeder said, "Sure I like to sell a few good bulls, and I'll probably keep on selling them, but if artificial breeding will help my herd I'll use it. Why bar the door to genetic improvement?"

We believe the next few years will find beef bull use increasing in artificial breeding.

"When a $6 breeding fee will give you a calf that brings $4 to $5 a hundred more as a yearling because it looks like a beef animal, I'll buy it any day," says a Pennsylvania dairyman.

Around Lancaster, Pa., dairymen insist that their bull stud (Southeastern Pennsylvania Artificial Breeding Cooperative, Lancaster) keep beef bulls. Says one dairyman, "Beef bulls help improve dairy herds. We breed our poorest cows to beef bulls and sell the calf on the market. If we bred this same cow to a dairy bull, we would raise the heifer and just add another poor milker to our herd."

Heat during pregnancy

Before the advent of artificial breeding, a cow that came in heat after passing several possible heat periods was considered unique. In the records of the Carnation Farms herd, however, Dr. R. E. Erb found 18 per cent of 1,905 cows which had calved one or more times showed evidences of heat during pregnancy.

This situation has been observed by technicians throughout the country. They have learned to look, with some caution, upon the cow which comes back in heat after passing over several periods. On the average, about one out of six of these is in calf.

To inseminate such cows by the intra-uterine method is almost certain to result in abortion. Technicians, therefore, if the cow does not show positive evidence of pregnancy, simply spray the opening of the cervix with semen and do not use the intra-uterine technique. The result is fewer abortions.

If the cow is in calf, the insemination does no harm. If she isn't pregnant, the vaginal insemination technique may do the job and time is saved.

The reason pregnant cows sometimes come in heat is an endocrine condition. The hormones which produce estrus or "heat," commonly called estrogenic hormones, override the influence of the hormones of the corpus luteum of pregnancy. In some cows the balance between these hormones is imperfect and variable. It is a non-pathological condition and is not influenced by breed of cattle, season of the year, climate, sex of the calf carried, nor age of the cow.

It is important, therefore, that repeat breedings be made only in the lips of the cervix, never in the cervix proper nor in the horns of the uterus. Furthermore, cows should not be discarded as infertile without a careful diagnosis for pregnancy.

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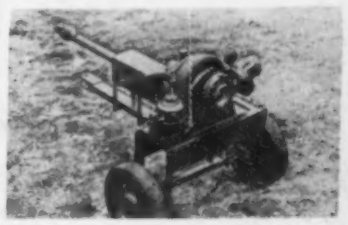

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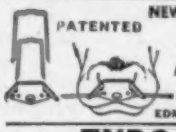

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DAIRY FARM HOME

If you are an adventurous soul, a food freezer in your home is an invitation for you to experiment with foods, recipes, meal planning, and even grocery shopping. Food freezing is no cut-and-dried affair for there are still new things to be tried. It's all up to you to . . .

BEEF STEW AND FRENCH BREAD were prepared days ahead of time; taken from freezer; reheated; and served. Tips: Do not overcook when reheating and omit potatoes in stew because frozen, cooked potatoes tend to become soft and watery.

have fun freezing

by Margaret Speers

FREEZER manufacturers and our state college and university research centers have completed many experiments over the years which have yielded a wealth of information for homemakers with food freezers. The experiments still go on. And much of the fun of owning a food freezer is in not being afraid to experiment yourself.

A freezer enables you to take advantage of food sales, from which you will realize considerable savings in dollars and cents. In addition to the savings money-wise, with good planning there can be considerable saving in shopping time. By planning meals and menus ahead and by jotting down every grocery need as it comes to mind, you can actually, with a little practice, cut grocery shopping down to twice a month.

No matter what you freeze, proper packaging is important; it is one of the big factors in retaining the high quality of the foods that go into your freezer. If packaging isn't good, there can be loss of color, flavor, texture, and nutritive value. In meats there can be "freezer burn" or drying of food. It is important:

- To use moisture-vapor-proof paper and containers or hole-free polyethylene bags.
- To remove as much air as possible from the packages.
- To carefully seal the tightly wrapped packages.
- To label each package for usage within the recommended storage time.

Pointers on meats and poultry . . .

- Whenever possible, bone meat before packaging. Boned meat takes up much less freezer space. Save the bones; boil them down for soup or gravy stock. Package and freeze the stock.
- Pork chops and ham slices will stay moist for longer periods if cut thick for freezing.
- Pork sausage and ground meats keep better without seasoning.
- Smoked meats require exceptionally good wrapping and air-tight sealing to keep odor from getting into other packages.
- Lamb chops keep better if cut an inch thick. Cubed lamb meat retains more natural juice than ground lamb, when frozen.
- The most recent experiments show that chicken and turkey should be aged before freezing. Aging time for chicken is about 10 hours at a 32- to 40-degree temperature; for turkey it is 20 to 24 hours at 32 to 40 degrees. Poultry not aged before freezing is inclined to be tougher than the aged poultry.

Storage temperatures seem to affect the quality of poultry more than any other treatment. Temperatures above zero result in a loss of flavor, tenderness, and juiciness. Best results are obtained when storing poultry at zero to minus 10-degree temperature.

Dairy products and eggs . . .

Have you frozen butter? It freezes well. Simply overwrap the original package with moisture-vapor-proof paper or put it into a polyethylene bag and seal. When you want to use it, remove overwrap and thaw in the refrigerator. Butter will keep in the freezer for a maximum of six months.

Whipped cream freezes well, too. Freeze individual portions on a cooky sheet. When these are frozen solid, remove from sheet and place in containers. To freeze a whipped cream-topped pie, cake, or pudding, prepare ready to serve and freeze unwrapped. When frozen, wrap in polyethylene bag and return to freezer.

If you find a reason to freeze eggs, you can do that, too. To freeze whole eggs, mix lightly with a fork, just breaking yolks. Put eggs into containers that will hold exactly the right amount for recipes you use most. These are best for scrambled eggs, omelets, and souffles.

Egg whites may be frozen alone, too. Package and freeze in amount used for making angel cake, meringues, and souffles.

Egg yolks may be frozen, but require the addition of 1 teaspoon salt and 2 tablespoons of sugar, syrup, or honey per cup of yolks. Label as to what you have added.

In using frozen eggs, allow 1½ to 2 tablespoons of egg white for the white of 1 egg; 1 tablespoon of yolk for the yolk of 1 egg.

Some cheeses freeze well; these are Cheddar, cottage (dry), blue, brick, Swiss, Provolini, Mozzarella, Liederkranz, Camembert, Parmesan, and Romano. Freeze cheese in pieces no larger than one-half pound and make the initial freezing rapid. Do not store longer than four or five months. Blue cheese tends to crumble when frozen, but since it is often used in this form, it may not be objectionable. Cream cheese has a tendency to become watery when frozen.

Most home-cooked foods, casseroles, and leftovers may be frozen ready to heat and serve. Use your regular recipes, noting these tips:

- Highly-seasoned foods lose a little flavor over long storage, so, with the exception of salt, seasonings should be increased about one-fourth.
- Use rice as a "binder" for casseroles. Rice freezes well whereas macaroni, spaghetti, and noodles in frozen casseroles tend to soften on reheating.
- Try adding blanched or defrosted uncooked peas to casseroles, stews, and soups for freezing. They'll cook during the reheating process. Also freeze soups without the macaroni and add macaroni at time of reheating.

Prepared foods and sandwiches . . .

If you have lunch-carriers in your family, a real time saver is making sandwiches ahead and freezing them. Some foods are not satisfactory for sandwiches that are to be frozen. Lettuce and celery lose their crispness; jellies and jams soak into bread. However, jam, jelly, or marmalade mixed with peanut butter freezes well. Tomato slices and dressings should be added after the sandwich is thawed. Foods excellent for freezing in sandwiches are: Finely grated egg yolks, cheese and cheese spreads, peanut butter, sliced fowl or meat, luncheon meats, and minced sea foods.

Breads and pastries . . .

Yeast breads and rolls and quick breads are of best quality when baked before freezing. Wrap baked goods in foil or seal in polyethylene bags. Breads will keep up to a year. Cookies may be freshly baked from frozen dough or baked and then stored in the freezer.

Unbaked fruit pies freeze better than baked ones; custard type pies do not freeze successfully. All cakes freeze well; they may be frozen iced if butter-type, fudge, or penuche frostings are used. Egg white frostings do not hold up during freezing.

Put these in freezer . . .

Nut meats of any variety (packed in air tight containers or cartons), caramel corn, potato chips, ground spices, fruit juices of all kinds, and purees.

THE END

From Day to Day

by Lois J. Hurley

TWO letters have arrived in answer to the recent request for counsel by a Michigan woman who is prospecting for a farm in some other state. She wondered if anybody had re-located successfully and whether or not it paid to pull up stakes and leave family and friends for a new start elsewhere.

"We moved from Minnesota to Wisconsin last fall and surely do like it," writes Mrs. Ray Reiter. "We have no-one here that we can call family, but have made new friends in the community and church and they have been wonderful to us. Letters from back home also help.

"We lived on one place for 20 years and never planned to move. One day we saw a farm located in central Wisconsin advertised in Hoard's Dairyman. It had a 10-year-old house, all modern, a 13-year-old barn, cattle, feed, and machinery. My husband wanted us to go and look at it; we did and liked it so well we sold out and moved. We are making a good living besides paying for our farm and would never go back to our old place.

"I wish you a lot of good luck."

The other letter comes from Mrs. Alvin Baltzer of Minnesota.

"We are faced with the same problem as your reader from Michigan concerning buying a farm.

"She says they have considered buying in Minnesota. We don't want to buy here; not because it is growing industrially but because good land is too expensive (often $400 an acre) and good farms scarce. I would never advise this friend to come to Minnesota.

"I know how she feels about leaving family and friends. We are the fifth generation in this house and my family is all here.

"We have been contacting land agents through ads in Hoard's Dairyman and are finding that good land and farm buildings can be had at much less money elsewhere and we are now considering Georgia.

"We feel the South would be a good choice for several reasons. One is health; another is year-round grazing. Putting up hay and silage to last for four to six months is not easy. And who wouldn't want a warmer climate?"

Maybe there are a few facts in these letters that our Michigan friend will find helpful. I would add just one cautious thought to relocating in the South. Ways of life and living and prices of what you sell may be startlingly different to a northern born and bred person. It's pleasant after you get used to it but it does take some adjusting.

Wandering washers . . .

New house plans are taking the laundry center out of the kitchen and placing it in the "bedroom zone" according to a survey recently made by a national clearing house for building information. Where it isn't possible or logical to locate it near bedrooms and bath, it is being returned to the basement.

So, common sense triumphs again. I have always been at a loss to see how any woman in her right mind could want her washing machine in the kitchen. If it was just a matter of popping the clothes in the washer it might be fine and dandy, but did the bright brains who thought of this location in the first place consider that dirty clothes have to be sorted? That a lot of things have to be sudsed out by hand before going into the washer? That some things have to soak? That there is starching to be done, etc., etc.?

Who wants a pile of dirty underpants piled alongside the pork chops or a tangle of soaked socks mixed up with the sausages? And without doubt, it is sometimes necessary to be cooking and washing at the same time.

No, thank you. In a utility room next-door to the kitchen is fine, if building space allows. Near the bedrooms and bath is more logical, though a bit impractical if these rooms are located upstairs, as they are in all but one-level homes. Coming home to the basement seems inevitable to me and is the right and proper place to handle dirty clothes.

Mamma and the neighbors used to wash in the backyard under the sassafras and persimmon trees, heating their water in a big iron kettle that stood on three legs over an open fire. They boiled their white clothes in the kettle, too. This was a primitive and unhandy way to wash but it had its advantages, too. Fresh air, warm Missouri sunshine, bees buzzing in the near-by honeysuckle.

And it was no problem those days in just what "zone" to locate the "laundry center" . . . bedroom, bathroom, or kitchen. You put it close by the well or cistern! All else paled before the necessity of lugging heavy pails of water. The shortest distance between two points was aimed for!

Foam facts . . .

The query has come in several times about the way to wash foam rubber pillows or cushions.

They can be successfully laundered either by hand or machine, advises one of our home management specialists. A simple way is to let them soak in soapy water in the wash tub, holding the pillow down until it is full of water, so it won't float, and squeezing the warm suds through the pillow. Rinse thoroughly in several waters of the same temperature, which should be moderate. Soap that is left in will tend to deteriorate foam rubber.

They may be successfully washed in the automatic, too. Use warm water and thoroughly dissolve soap or detergent before putting the pillow in. Wash only four to six minutes, doing two pillows at a time to balance the load for proper spinning. Leave the pillow covers on for protection in machine.

If you're going to dry them outside, choose a warm, sunny, windless day. Hang to the line in a large pillow case to avoid direct pinning of the foam rubber. If you dry inside, choose a place of good air circulation; a fan helps. Don't plan to put the pillow back on the bed until thoroughly dry which may be several days. The heat and tumbling action of a clothes dryer are hard on foam rubber.

Ten-year-old son (on sight seeing tour): "Hey, Pop, what's that building?"

Father: "I don't know."

Son (later): "Pop, what's that big sign for?"

Father: "How should I know?"

Son: "Say, Pop, you're not mad when I ask these questions, are you?"

Father: "No, son,. It's the only way you will ever learn anything."

4551. Only FOUR main pattern parts! The smart V-neckline is accented by rows of tucks; skirt flares gently. Printed pattern in misses' sizes 10 to 20. Size 16 takes 4½ yards 35-inch fabric. Price 35 cents.

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9276. Scoop-neck dress, whirly skirt, and contrast cummerbund. Printed pattern in girls' sizes, 6,8,10,12,14. Size 10 dress, 2⅞ yards 39-inch fabric; cummerbund, ⅛ yard 35-inch fabric. Price 35 cents.

9030. Pretty buttoned bodice with slimming 8-gore skirt. Printed pattern in half sizes 14½ to 24½. Size 16½ takes 4¼ yards 39-inch fabric. Price 35 cents.

9051. Your favorite good classic with step-in styling and handy pockets. Printed pattern in misses' sizes 12 to 20; 40 to 42. Size 16 takes 4¼ yards 35-inch fabric. Price 35 cents.

7019. Crochet each of these dainty doilies in less than a day. Directions for 9-inch round doily, 9-inch square, and 9½ x 14-inch oval in No. 50 mercerized cotton. Price 25 cents.

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Buttermilk makes it better

We've known this for some time. However, powdered buttermilk is now on the market. It is even more economical and convenient.

by Frances Leander

HAVE you found a recipe you would like to try that calls for buttermilk? Have you put off making it because you didn't have any buttermilk in the house? Or did you finally get a quart from the store and found most of it went to waste because your family preferred sweet milk for drinking?

That won't happen to you anymore if you become acquainted with the convenience and economy of powdered buttermilk. You just sift it in with the flour and use water as liquid. You are free to use it in any recipe calling for buttermilk.

Could anything be easier? Use 3 tablespoons to 1 cup water; 6 tablespoons to 1 pint. But don't worry about remembering those proportions. You'll find them on every package. Buy a package. Try these recipes and then experiment with some of your own.

Chocolate Cake

This chocolate cake has three things to recommend it. First, it uses powdered buttermilk; second, you don't measure the brown sugar; just dump in a pound package; and third, it makes a huge cake and cupcakes, too. When I bake it, I use two 9-inch cake pans or a flat pan, 10 by 13 inches, and have enough for cupcakes.

Cream **½ cup soft butter.** Gradually add **1 pound brown sugar** and beat until light and fluffy. Add **2 eggs** and beat hard. Stir in **2 squares melted chocolate, ½ cup water, and 2 teaspoons vanilla.**

Gradually add **2¼ cups sifted flour, 1½ tablespoons powdered buttermilk, and ½ teaspoon salt.** Beat thoroughly after each addition. Then stir **2 teaspoons soda** in **1 cup boiling water** and dump this into batter. (You'll think you have ruined the cake. You haven't!)

Pour this extremely thin batter into the above mentioned pans and bake 20 to 25 minutes at 350 degrees.

Cover with any good **powdered sugar frosting.**

My Best Rolls

This is one of the simplest roll recipes yet. You let the soda and buttermilk do most of the kneading.

Dissolve **2 packages or 2 cakes yeast** in **2¼ cups lukewarm water.**

Sift together **5 cups flour, 2 teaspoons salt, 1 teaspoon baking powder, 1 teaspoon soda, 6 tablespoons powdered buttermilk,** and **¼ to ½ cup sugar** depending on how sweet you want them.

Add ½ of flour mixture to water and yeast mixture and beat well. Pour in **6 tablespoons melted butter.** Beat and add rest of flour mixture. Mix slightly and tip upside down on floured board with bowl on top. Set your timer and let it rest for 10 minutes. This is the point where the soda and buttermilk help you with the kneading. After 10 minutes, remove the bowl and finish kneading so it will be smooth. This won't take long. Now put the bowl back and set the timer for 20 minutes. When the timer rings you are ready to make them into cinnamon rolls, dinner rolls, or sweet bread. Form them into rolls; let rise until doubled in bulk and then bake at 425 degrees for 7 to 10 minutes. This dough has endless possibilities, as you will see once you try it.

Swedish Limpa

Here's the bread my family loves.

Dissolve **1 cake yeast** in **½ cup warm water.**

Mix in saucepan and bring to a boil **½ cup sugar, 1 tablespoon salt, 2 tablespoons butter, ¼ cup molasses, and 1½ cups water.**

Mix slightly **6 tablespoons powdered buttermilk and 2 cups water.** Add **1 teaspoon soda.** Watch out! It fizzes. Mix well and let cool slightly. Add yeast mixture.

Add about **3 cups white flour** and knead well. You may need slightly more or less. Place in a greased bowl and let rise until doubled. Turn out on floured board; knead slightly; and shape into 3 loaves. Place in greased tins and let rise until doubled in bulk. Bake 1 hour in moderate oven. It freezes well.

Now I've started you using powdered buttermilk. From now on you are on your own. Happy exploring and good eating! **THE END**

Chocolate Cake

My Best Rolls

Swedish Limpa

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POULTRY

Joe W. Sicer

Keep chickens cool

Much of the loss from lowered production and slower growth can be reduced if a few simple precautions are taken.

CHICKENS have no sweat glands. They therefore have no "built-in air conditioner" for their bodies. We have seen them try to keep themselves cool by spreading their wings and panting but neither helps very much.

Let's consider some common questions on this heat problem:

When does heat become critical for chickens?

They are in danger of death from heat exhaustion whenever the air temperature reaches 100 degrees. But egg production, egg size, and rate of growth can be seriously affected at much lower temperatures.

At about 75 degrees, egg size will be smaller. This will be more pronounced as the air temperature goes up. Shells often will be thinner and weaker when the temperature hovers in the 80's.

Around 85 degrees, feed consumption will be lowered. At 90 to 95 degrees, egg production will be seriously hurt and growth rate of broilers will be definitely reduced.

Why does the beginning of a hot spell often cause the most loss?

Chickens tend to become acclimated to hot weather. When hot weather first hits, the chickens have had no chance to adjust their systems to it. Their body temperature rises rapidly. They are in serious trouble. After a week of continued hot weather, they seem to adapt themselves someway.

What is the most important help a poultryman can use to keep chickens cool?

A superabundance of cool drinking water. Water consumption doubles in hot weather. Plenty of cool drinking water will cool the chicken's body internally. This can be extremely important.

Drinking water space should be at least doubled during hot weather. Pans or troughs should be low enough that it is not necessary for the birds to jump up onto a platform to get a drink. Waterers should be so protected with grids or other devices that chickens cannot sit on them, thereby keeping other chickens from drinking.

Extra pans or water troughs can be kept in the chicken house, ready for prompt use when needed. A hose with a squeeze valve on the end is a simple, practical method of filling these extra waterers.

On the range, water pipes should be buried to protect them from the sun. Waterers should be shaded.

Will fans help?

Fans can be helpful in circulating the air over and around the chickens, thereby quickly carrying away from the chickens the excess body heat they are generating. But fans alone are not going to cool a house below the outside temperature.

Because they can be moved to critical areas, portable fans, mounted on firm stands about three feet high, are advantageous. In houses with large open doors at the ends, it is best to have all fans blowing in the same direction to provide a continuous movement of air through the building instead of merely circulating it. Direct this movement to supplement any natural air movement.

Exhaust fans can be helpful to pull out the heat accumulated near the ceiling. Fans are especially good in wide houses and under crowded conditions.

In houses, without fans, windows and doors should be opened wide. Cross ventilation, with an abundance of openings in the north wall, is a big help.

Is it worth-while to paint roofs white?

Because white reflects the sun's heat, painting the roof with white paint or whitewash may cut house temperatures up to 15 degrees. The effectiveness varies with the insulation and ventilation. Bright aluminum roofing also reflects heat. A dirty galvanized steel roof will absorb 89 per cent of the solar heat, the same as asphalt or roll roofing. **Caution:** When galvanized iron is whitewashed, no salt should be used in the wash.

Water sprayed on the roof, as from a long sprinkler laid along the roof ridge, is also effective.

The same insulation which helps keep out winter cold also will keep out summer heat. Ceiling or roof insulation is especially helpful.

Does deep litter affect house temperature?

It may. If the litter is composting, it will be generating heat. This is quite likely to happen in broiler houses. Remove much of the deep litter before hot weather, leaving only enough of a covering to maintain dryness.

Is shade worth-while?

For the long pull, plant trees to shade the house. Shade on the west of a house running north and south is particularly helpful. The cooling effect of trees on the air underneath them gives a source of cooler air that can be pulled into the house.

A green covering on the ground around the house reduces another damaging source of heat, that reflected from the ground.

What about sprinkling in the house itself?

In extreme emergencies, it often helps to spray the litter, and even the birds themselves, with a fine mist of water. No more water should be sprayed in the house than will be evaporated before night.

A fog of spray in front of an operating fan often is very effective.

Sprinkling the foliage of trees or shrubs near enough to the house so the resulting cooled air can be drawn into it is also helpful.

What can be done for birds overcome by the heat?

Douse them in cool water and put them in a cool place where they will not be molested. Heat exhaustion is most likely to happen in early afternoon. Check the birds in the nests and those stretched out around the waterers.

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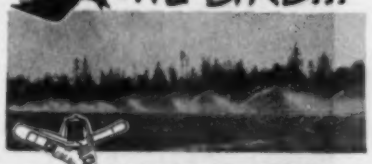

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Know your legal water rights

(Continued from page 646)

Now that you have the previous information clearly in mind, let's list possible types of water sources and then discuss a couple of them to give you an idea:

1. Underground water
   a) aquifers
   b) groundwater reservoirs
   c) subterranean streams
2. Surface water supplies
   a) diffused waters
   b) intermittent streams (in the sense that they dry up in the summer)
   c) perennial minor streams in the upper headwaters
   d) perennial major streams
   e) streams with backwater from
      (1) fresh water lakes
      (2) salt water lakes or seas
   f) lakes (large)
   g) lakes (small, privately owned)
   h) ponds (natural)
   i) ponds (artificial)
   j) swamps
   k) springs
   l) storage or otherwise wasted flood water
   m) storage from multiple purpose reservoirs

In looking over this list, we note, from experience, that the average irrigator usually does not have much choice of his source. At the most, only one or two possibilities exist for him. And very often, these choices have some legal or other hazard dealing with dependability of supply or cost.

The irrigator is immediately confronted with a legal problem. He can approach it in several ways. In every case he is concerned with laws, court decisions, custom, or lack of custom.

He can:

1. Acquire a legal water right if the law provides for it.

2. Use water adversely against someone else's right and be subject to suit.

3. Pick a source that no one is interested in and thus use water adversely against possible claimants.

4. Stir up some interest in the subject and get a law passed that will establish an orderly and equitable method of securing a water right.

As we look over the foregoing list of water sources, it appears that each falls into one or more of the above four categories.

Now let's talk about some of these sources to give you an idea of how you stand when you decide to irrigate, or where you are with that new pump.

1. **Wells** — Generally, in most states, the irrigator can use his underground supplies because they usually belong to the owner of the overlying land. In any event, the law pertaining to an area or a state can be ascertained and water used in accordance with that law, subject to whatever legal restrictions there may be relating to the amount, purpose, or time of use.

2. **Diffused waters** — Diffused waters are generally defined as waters that have fallen upon the land but have not as yet become part of a watercourse. As such, they may be captured by the landowner and put to almost any use he sees fit.

Such waters are often captured by the use of diversion ditches and transported to a tank or pond to be stored for future use. Although this is a legal way to capture the needed water, it is generally not very satisfactory. Because of the nature of the terrain adjoining the acreage to be irrigated, it often limits the total available run-off. In many parts of the East, however, not more than two or three acres would be needed from which to collect an acre-foot of irrigation water.

3. **Springs** — Springs are mentioned separately because of the prevailing notion that they belong to the owner of the land. In most states the waters from springs are generally held not to be diffused waters and thus are, in effect, parts of a watercourse.

4. **Streams, lakes, ponds, swamps** — In the majority of cases the water flowing or at rest in this category has already been spoken for. At the very least, downstream owners have well established riparian rights which preclude any additional tampering with the flow or the volume in the lake.

It is here that the farmer and the engineer run into real trouble. The farmer notes that large supplies of water are running past his place and, as far as he can see, not being used by anyone. In many cases, farmers tap these sources of supply and irrigate undisturbed for years. In other cases, they find themselves confronted with a lawsuit.

In some situations there exist no apparent adverse users of the water for a variety of reasons. It may be that the irrigator is far down on the stream and the supply is far in excess of the demand so that no other downstream owners are being hurt. Or, it may be that downstream owners have no present interest in the water. It may be that no adverse claimant has appeared because of lack of knowledge of his rights. In any case, the prospective irrigator is running a risk that may be costly.

5. **Flood water** — Usually the riparian owner does not contemplate using flood waters with the result that he is not concerned whether these are captured or not.

There appears to be no rule on this matter although it is on this source that many large municipal users are depending for their supply. In many cases, the use of this water is provided for in special legislation giving the municipality or others certain rights.

6. **Where do we stand?** — At the present time two states, Virginia and Mississippi, have passed laws to make it legal to capture certain waters for irrigation and other uses. In 24 of the 29 eastern states, committees or commissions have been established to study the matter and recommend legislation. The hard, bare truth is that the bulk of farmers now irrigating in the humid East are doing it without legal authority.

Isn't it time that you and your neighbors get together and see that the right to use irrigation water is a legal right, thus safeguarding that four or five figure investment that you've made in pumps and pipe and other equipment? **THE END**

Correction

On page 492 of our May 10 issue a mechanical error made one of the paragraphs in the article, "Green pastures in winter?" sound rather ridiculous. In discussing the drought that had taken place in New England, the paragraph should have read as follows:

Due to the drought almost every farmer had to purchase some supplementary feed, including hay, or roughage substitutes. Being old hands at this, they were doing a good job of purchasing feed economically."

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Increase SORGHUM yields

Poor stands, lodging, disease, and birds took their toll in 1957. Here is how you can reduce such losses.

by W. H. Luckmann

AUTHOR examining head of grain sorghum for insects and disease. Late-season infestations of corn borer, corn earworm, fall armyworm, or webworm can be controlled by applying one-fourth to one-half pound phosdrin per acre.

LAST year, farmers in Illinois grew more sorghum than ever before, and it is a good guess they will plant even more in 1958. Generally, the same thing is happening throughout many of the corn belt states.

There are two main types of sorghum. There is the forage type used for silage and the short, dwarf type used for grain. Many farmers are using the grain type for silage, however.

One or two years' experience growing sorghum has been satisfying to some farmers and disheartening to others. Poor stands, lodging, diseases, insects, and birds took their toll, and farmers must realize they cannot shift to sorghum as a substitute crop without taking along some of the usual problems plus some new ones.

The major insects . . .

The major insects attacking sorghum (corn earworm, European corn borer, corn leaf aphid, chinch bug, and fall armyworm) are already familiar to most farmers. The two pests that are new to him, the sorghum midge and the sorghum webworm, are fairly restricted to the southern limits of the corn belt.

Of the seven insects growers are most likely to encounter, only the aphid and the chinch bug will readily attack both forage and grain sorghum. Both pests seem to prefer sorghum to corn. The corn leaf aphid could be an annual problem wherever sorghums are grown, but spraying may not be necessary.

Lady beetles and their young will keep many infestations of aphids down to non-economic levels. Sprays of ¼ pound phosdrin, ½ pound parathion, or 1 pound malathion per acre will give good control where chemical control is needed.

Chinch bugs . . .

Chinch bugs can be avoided by adhering to the old standard recommendation of not planting sorghum adjacent to wheat. When that is impossible, a border treatment of ¼ pound dieldrin per acre is very effective. A band several rods wide should be sprayed into the sorghum and into the wheat where the two crops meet.

Perhaps the No. 1 pest of grain sorghum is the corn earworm and it will bother growers every year. The earworm feeds on the sorghum head but it may begin its destructive work while the head is still down in the whorl or boot. Another caterpillar, the fall armyworm, is similar to the corn earworm and the two feed together in the head. For all practical purposes they may be considered as the same insect and two or three of these worms in each head will make chemical control worthwhile.

If you live in an area where broken corn tassels are a common sight, look out for broken sorghum heads. The European corn borer does not attack sorghum as much as corn, but infestations of 25 to 50 per cent will not be uncommon where corn borers are numerous.

As with corn, much depends on the variety, and some varieties of sorghum are quite resistant to the borer. Second and third generation borers feeding the stalk just below the sorghum head, hollow out the stem enough to cause the head to break over or fall off completely.

Next to the corn earworm, the cornborer can be one of the more severe pests of grain sorghum since it is fairly well distributed throughout the corn belt.

Midge and webworm . . .

The sorghum midge and the sorghum webworm are old pests of sorghum but new pests to many sorghum growers. Either of these can ruin grain sorghum fields.

The webworm does well where there is plenty of moisture. It is possible this insect may do far more damage in states like Illinois and Missouri than in the major sorghum states, Texas and Kansas, where moisture is more critical.

The sorghum midge is also a southern pest and heads attacked by it will produce little or no seed. Although limited to the southern edge of the corn belt, the midge and webworm caused considerable damage last year, and there is every reason to expect these pests again this year.

What should the sorghum grower do about insects in 1958? In the corn belt the best answer is early planting. Early planting is the only control for the sorghum midge. Sorghum planted as early in the season as good agronomic practices permit will be less attractive to all of the major insects with the exception of the corn leaf aphid and the chinch bug.

Late-season infestations of the corn earworm, corn borer, fall armyworm, or the sorghum webworm may be difficult to combat. Phosdrin at ¼ to ½ pound per acre is the best insecticide for these pests. Use the higher dosage for aerial application. Remember, insecticides are poisons but they can be safely used. Carefully read the label on the container and use the chemical as recommended.

The author is an associate entomologist, Illinois Natural History Survey, University of Illinois.

MIDGE is a southern pest and the sorghum heads attacked by it will produce little or no seed.

WEBWORM larva is about one-half inch long when full grown. These insects can ruin sorghum.

Farm Shop
by Leo Roethe

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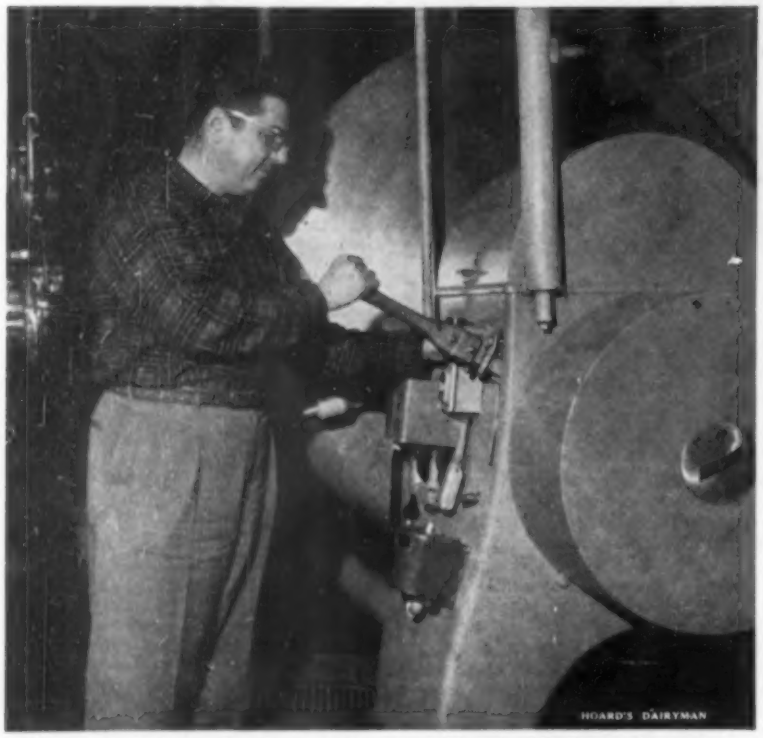
YOUNG DAIRYMEN — *Careers in agriculture* — No. 34



THE AUTHOR pulls the switch that will put this large churn into motion. Good, clean equipment is essential in making quality butter.

BULK BUTTER being weighed. It is packed in 50-pound, paper-lined baskets and cooled before being run through printing-packaging machine.

We make 9 million pounds of butter

You may have to start at the bottom, but if you have the ability, there always is room at the top, perhaps managing a large creamery.

by L. A. Wuethrich

THE work of managing our creamery involves keeping a crew of 40 men busy. There is butter to be manufactured and packaged and skim milk powder to be made. Loads of butter have to be scheduled to customers in six states, as well as to local routes.

I must oversee the lab, be sure that all machinery is operating efficiently and is in good repair, and make sure the trucks are in running order and are neat in appearance. In general, I keep the whole operation coordinated. At times this includes soliciting business as well as selling.

My experience has included working on a farm until I was 18 and working in the dairy plant since then. This work requires at least a high school education, but college is preferable. An exceptional knowledge of arithmetic and other mathematics, as well as chemistry and mechanics is necessary. To keep up on all new developments, I also attend all meetings that pertain to our particular field of dairy manufacturing.

Working with people . . .

I like my work because it involves working with people. It also carries that certain satisfaction of doing something constructive.

I try to know enough about every job so I can help anyone who is having trouble. In the community I am on the church board, school board, have worked with Boy Scouts and nearly all civic projects.

In this work you may spend as much as 80 hours per week, but probably will average about 60. Income may range from $5,000 to $25,000 per year, depending on the size of the plant and years of experience.

I travel about 10,000 miles each year. This amounts to about 10 per cent of my time. We have a full-time salesman and a fieldman. My brother and I assist with both of these jobs.

It takes a strong, healthy body to do this work. In our case, we cover a plant that is about 400 feet long. This means a lot of walking to make the rounds about every hour.

Job is secure . . .

Making butter is secure because there always is a large amount of cream produced in this area and there always will be a demand for one of nature's most perfect foods. If we can keep our procurement and production costs low, I see no reason why this business can't continue to be profitable.

My job carries a terrific amount of responsibility. If you are willing to shoulder responsibility, there always will be an opening. The biggest trouble is that most people want to work from 7 to 5 and forget their job until the next morning. There are times when I have to forget there is a clock.

The turning point in my career was when I was about 18. I did not like milking cows so I asked my dad if I could work in the creamery. About three years later I was taken in as a partner and have been in business since.

Anyone interested in this work should contact one of the large creameries in his own area. It may mean starting at the bottom, but if you have the ability, there always is room "at the top."

THE END

The author is co-manager of the John Wuethrich Creamery Company, Greenwood, Wisconsin.

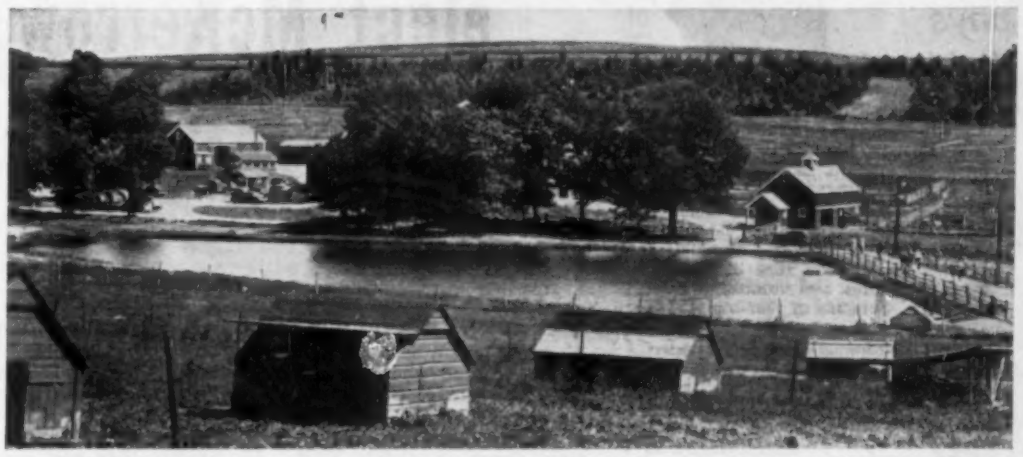
BARNEY FARMLAN

"Wasn't that perfect, Dad?"

How to keep a farm pond clean

Keep out muddy water, rake off algae and scum, and pull out the surface weeds. If this doesn't work, use chemicals.

by Hugh M. Wilson



A CLEAN POND is a source of water for cattle and is also very good insurance in case of fire.

POND management begins with construction. Since algae and weeds present less of a problem in deep water, plan to have an average depth of at least six feet and limit shallow water to a minimum fringe around the edges. Keep muddy water out by controlling erosion on the watershed and by maintaining a strip of grass around the pond.

If it is used for swimming, spread sand on the area where the bathers wade. Should cloudy water persist, try spreading ground limestone on the pond at the rate of about 500 pounds per acre.

Algae and scum may be raked out of a small pond by drawing a wire clothesline or short section of fence wire across it.

None of the chemical solutions which are mentioned appear to be harmful to fish if used in the recommended manner. Before treatment, it is desirable to lower the pond surface by at least a foot to prevent overflow and possible contamination downstream. Chemicals will not be effective if there is a constant overflow.

Keep livestock out and do not use the water for drinking or swimming for at least a week after treatment. Specific precautions are mentioned under each treatment.

To control scum and algae . . .

Use one-half pound of copper sulphate for each million pounds of water in the pond. If it was designed by a soil conservationist, or other qualified engineer, he can tell you how many pounds of water your pond contains. If not, you can make your own calculations as follows: Multiply the average length times average width times average depth to find the cubic feet of water. Then multiply this figure by 62.5 (weight of one cubic foot of water). For example, let's assume we are computing the pounds of water in a pond that is 125 feet long, 110 feet wide and has an average depth of 7 feet:

$125 \times 110 \times 7 =$ 96,250 cu. ft. of water
$96250 \times 62.5 =$ 6,015,625 lbs. of water

To apply the copper sulphate dissolve the material in water and spray it on the surface. A readily soluble form of the chemical, called "copper sulphate snow" is sold by some farm supply houses.

The first application should be in early spring when scum is first noted in the shallow portions. Choose a warm, sunny, and windy day when algae will be near the surface and apply spray directly on growth.

Repeat applications may be required if treatment is delayed until thick mats of algae have formed. In that case, spray in sections, since if all the algae are killed at one time, decomposition may use up oxygen in the water and cause fish to die. Wait a week before spraying the next section.

To control submerged-rooted plants . . .

Use sodium arsenite at the rate of 3 or 4 pounds per million pounds of water. Calculate the pounds of water in the pond as in the previous example. Also, the chemical will not be in pure form so make due allowance. For example, if the label states that the can contains 20 per cent sodium arsenite, you will need to buy five pounds for every pound that your calculations show are required.

Mix the desired amount of chemical in water and spray on the surface over the weed beds. As in algae control, spray heavily-infested ponds in sections and wait a week between applications.

Sodium arsenite is a deadly poison and causes severe burns. Wear goggles, rubber gloves, and hip boots and keep the material away from your face. Be careful not to spill any of the solution where children or animals might reach it. To play safe, do not use the water for at least a week; fence out livestock; and warn your neighbors to stay away from the pond.

To control surface weeds . . .

2,4-D is effective against weeds that stick up out of the water. The ester form is more effective than the amine. A 5 per cent solution mixed with kerosene seems to give good results on many surface weeds. However, repeated applications of a 10 per cent solution may be required to kill cattails and lilies.

In using 2,4-D, it is not necessary to figure the weight of water in the pond since the material is applied directly on the plants. Instead, from the label on the package determine the concentration of 2,4-D in the material that you buy. This is usually expressed as "acid equivalent percentage by weight." If the brand that you buy contains 20 per cent acid equivalent, one way to figure the amount to purchase would be as follows:

20 per cent in commercial product
5 per cent solution desired = 4

Thus, one gallon of 20 per cent product would make four gallons of spray. So merely pour one gallon of commercial 2,4-D into a barrel; add three gallons of kerosene and you are all set. But remember, this is only an example and since different brands contain different proportions, you must make your own calculations.

Although 2,4-D is not considered to be poisonous to man or animals, it is highly toxic to some plants. So make sure that the fumes do not drift over your own or your neighbors' fields. Also make certain that there is no overflow from the pond for a week. Should the water be used downstream for irrigation, you might have a lawsuit on your hands.

For more information on pond management write your state experiment station or bureau of fisheries. This is very important if you plan to use any chemical, since its use may be limited by law. **THE END**

Editor's Note:

Gypsum has been widely used as a material for clearing up farm ponds. As a matter of fact, any kind of salt would clear them up, except gypsum simply does a better job of it. Also, gypsum is a low-cost material. It is a white salt composed of calcium sulfate. The calcium in the gypsum reacts with the soil-clay particles suspended in the water and causes them to flocculate or aggregate and drop out of suspension thereby leaving the water clear. Many farm ponds have been cleared by the use of gypsum. The amount that one should use would depend, of course, upon the size of the pond to be treated.

To do a good job on the average farm pond, it would take 1,000 pounds of gypsum per acre foot of water. There are two factors involved, the volume of water and the amount of calcium or base carried in the water, which many times will be dependent on the clay content in it. The gypsum could be placed in bags and deposited around the edges of the pond, or it simply could be sprinkled in the water around the edges of the pond. Since it is highly soluble it will go into solution and begin its job of clearing up the water.

The author is soil conservationist at Cornell University, Ithaca, New York.

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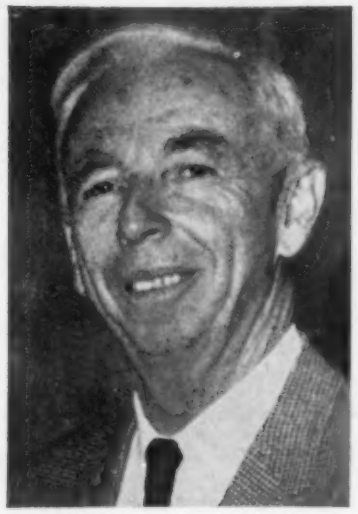
Guernsey breeders elect McKerrow

New penalty fees go into effect; Gold Star Recognition to be started; Lively succeeds Hayes as director.



GAVIN McKERROW

GAVIN McKERROW, longtime Wisconsin Guernsey breeder and president-general manager of Golden Guernsey Dairy Cooperative of Milwaukee, is the new president of The American Guernsey Cattle Club. He succeeds R. H. McMurtrie, Huntingburg, Ind., who served as president of the organization since 1954.

McKerrow, first chairman of the Golden Guernsey Advisory Council (1937-1946), has been on the Executive Committee since 1944. The entire McKerrow family is well known in livestock circles. The home farm at Pewaukee, Wis., is being operated by one of the sons, William, who is on the approved judges' list.

Succeeding McKerrow as vice-president is Lloyd S. Riford, owner of Greystone Farm, Auburn, N. Y. He was appointed to the executive committee in 1957 to fill the unexpired term of the late J. M. McDonald, Cortland, N. Y. Lloyd Wescott, Clinton, N. J., and Howard Ziegler, Clyde, Ohio, were re-elected to the board of directors. Jack Lively, Dallas, Texas, was elected to succeed Kent Hayes, Okahoma City, Okla., who resigned.

More than 250 Guernsey breeders, their families and friends, attended the club's 81st annual meeting in fabulous Miami Beach, Fla., early in May. Tours included some of Florida's largest Guernsey herds, as well as beautiful Biscayne Bay.

A panel discussion on "Dairying for profit with purebred Guernseys" was one of the program highlights. Special emphasis was placed on high production per man, improved feeding and management practices, and marketing and distribution of Golden Guernsey milk.

In his final message to the membership, retiring President McMurtrie spoke of the battle being waged by the dairy industry which already has resulted in one million casualties (that many dairy farmers have gone out of business in the past 10 years). He told the group they had the choice of increasing their market or curtailing the industry even further. Confident that special milk can continue to prove its worth, he asked for more salesmanship and greater cooperation. "Among the various segments of our industry, we need less selfish interest and more leadership, and better group thinking," McMurtrie said.

Milk sales set record . . .

In his annual report, Secretary-treasurer Robert Stewart pointed out that sales of Golden Guernsey milk reached an all-time high, and Gurn-Z-Gold (low fat Guernsey milk) accounted for 12 per cent of the total sales. There were 2,600 breeders producing Golden Guernsey milk and they registered 35 per cent of the females last year.

Commenting on registrations, Stewart lamented the fact that while there was a 10 per cent decrease in bull registrations, there are still many bulls from untested dams being recorded. Classification also reached an all-time record with 14,589 cows classified, a 40 per cent increase over 1956. A detailed breakdown on office service is presented in the table.

It was voted that the present penalty fee of $5 for all delinquent registrations be changed, effective at once, to $1 on animals 8 to 12 months, $3 on those 12 to 24, and $7 on animals over 24 months.

The fee to register animals under 8 months of age remains the same, $3 for members and $4 for non-members.

To provide equity to all breeders in the application of this new schedule, it was further voted that until November 1, 1958, the penalty fee shall be $1 on all delinquent registrations, regardless of the age of the animal.

Details of the Gold Star Recognition Program adopted by the association will be made public around the first of the year. Provisions have been set up for Gold Star Guernsey Sires, Dams, Breeders.

	1956	1957	(+ or —)
Female registrations	70,453	69,765	—
Male registrations	6,827	6,134	—
Total registrations	77,280	75,899	—
Registrations from artificial breeding	22,523	22,466	—
Per cent of total from artificial breeding	29.1	29.6	+
Female transfers	43,649	43,403	—
Male transfers	4,913	4,655	—
Total transfers	48,562	48,058	—
New members	154	166	+
Total membership	4,385	4,466	+
Herds on test	1,238	999	—
Cows on test	37,218	40,672	+
Per cent on herd test	90.5	95.6	+
Pounds milk per cow	8,793	8,894	+
Per cent fat	4.9	4.8	—
Pounds fat	427	432	+
Herds classified	286	461	+
Cows classified	9,908	14,253	+
Income			
Expenses			
Net income	$3,065	$11,620	+
Assets	$766,615.08	$703,969.90	—

Awards of honor . . .

Three long-time Guernsey breeders received the Association's Awards of Honor. They included James B. Guess, Jr., owner of Edisto Farms, Denmark, S. C., a Guernsey breeder and Golden Guernsey distributor since 1926 who milks more than 450 cows; W. A. Boutwell, Sr., Lake Worth, Fla., of Bomaje Farm, owned by Boutwell-Matheson, Inc., where 600 Guernseys are milked (largest distributors of Golden Guernsey milk in Florida); and V. C. Johnson of Dinsmore Farms, Dinsmore, Fla., home of the world's largest purebred Guernsey herd, having more than 1,400.

An Ohio-bred Indiana-raised, and Michigan-owned Guernsey cow won the coveted Skyline Trophy, presented by Otto Liebers, Lincoln, Neb., to the owner of the living Guernsey cow with the greatest lifetime milk production, that has not already won. Welcome In Bright Star, 15-year-old cow owned by Willard Frost, Fulton, Mich., was the winner. She has produced 145,115 pounds milk, 6,476 pounds fat in 11 lactations, all on 2x. Bred by W. W. McKitrick and Son, Ohio, she was owned for more than 12 years by Wayne Brewer, Union City, Ind.

The Tarbell Trophy, presented to the owner of the AR cow that exceeds her class average in butterfat by the highest percentage and meets calving requirements was won for the second time by Black Hole Hollow Farm, South Arlington, Vt. Black Hole Hollow Clarinet's Alma produced 22,916 pounds milk, 1,145 pounds butterfat in 365C on 2x as a 5-year-old, exceeding her class average by more than 93 per cent.

For the fourth consecutive year Abbott's Dairies, Inc., Philadelphia, Pa., won the distinction of being the largest distributor of Golden Guernsey milk.

It was announced that next year's annual meeting will be held in Syracuse, N. Y., during the last week in May.

An invitation to hold the 1960 meeting in Toronto, Canada, was accepted by the Executive Committee.

You can prevent low milk solids

(Continued from page 645)

movement through the animal may decrease the absorption of nutrients. The small grains and clovers also tend to stimulate production, increasing nutrient requirements.

Feed hay on pasture . . .

The best solution to the problem, when cows are on winter pasture, is to provide some good-quality hay in addition. Silage is not as effective as hay in this respect because of its high water content, although it may be used when hay is not available. The preserved forage increases the dry matter intake and slows down the movement of food through the digestive tract increasing absorption of food nutrients.

The amount of preserved forage required will depend upon the amount of winter pasture available, but even when unlimited pasture is available, it is desirable to provide about five pounds of hay per cow per day.

Where low solids-not-fat have been produced while cows were on hay and silage, the cause usually has been too little hay and silage for the number of cows or the forage has been of poor quality. In these cases, there is no alternative except to increase the forage fed or obtain better-quality forage.

The problem of poor-quality forage is particularly acute in areas where hay is difficult to make when the plants are at the best stage for preservation without rain damage. Rain-damaged hay or hays and silages preserved after seed formation generally have low digestibilities. Sixty per cent or more of such feeds may pass through the cow, doing her little or no good. When such feeds are fed, we can expect low levels of milk production as well as low solids-not-fat.

Drought causes low solids . . .

In severe cases, such as those existing in drought areas during recent years, both fat and solids-not-fat were found to be low. This situation resulted from the fact that very little roughage was available and grain made up too much of the ration. Even with extra grain, the total available nutrients were not adequate to maintain normal solids-not-fat and the lack of roughage depressed fat test. Volume of milk produced also was reduced.

A quite similar situation developed in many parts of the South during the past winter. Dairymen in these areas have depended upon winter pastures to supply a major part of the feed for their cows during this period. The cold, rainy weather limited the growth of these pastures, and stored hay and silage were not adequate to meet the needs of the animals. Purchased hay was frequently of poor quality and thus failed to supply adequate digestible nutrients.

The result, in many cases, was excessive dependence on grain, loss in milk production, and milk low in solids content.

Problems with low milk solids generally have been more severe in herds made up of the large breeds. These animals normally have a lower percentage of solids in their milk than the smaller breeds so that when reductions occur they are more readily noticed. The large animals also require more nutrients because of their larger size and milk production and show more response to poor rations than the small breeds.

The percentage of the cow population made up of the large breeds also has increased in recent years so that the blended milk received at the dairy plant normally is lower in solids than formerly. They are thus more likely to have difficulty with illegal milk in periods of feed scarcity than in the past.

What can dairymen do?

Since both low butterfat test and low solids-not-fat occur during periods when inadequate and/or poor-quality forage are fed, the solution lies in providing plenty of high-quality forage. This has long been advocated as the way to economical dairy production.

The unpredictability of weather conditions makes it essential that surpluses of forage be preserved any time they occur to compensate for deficiencies at other times.

The development of effective methods for ensiling of grasses and legumes at their peak of quality has made possible the use of surpluses of these crops during the spring and early summer when it usually is difficult to make hay without rain damage.

We must remember that the forage taken out of the hay barn or silo will be no better than the forage put in. These processes preserve but do not improve forage quality. The fact that cows will eat poor-quality hay during the winter, when no other forage is available, does not mean that their bodies can use it for milk production any better than at other times of the year when they would refuse it because of the availability of more palatable feeds.

The body of a dairy cow is a "milk factory" specially designed to convert fibrous feeds into "nature's most nearly perfect food." However, like any other factory, the cow must be provided high-quality raw materials if she is to be expected to produce a large volume of high-quality milk.

The provision of inferior raw materials or materials which she is not designed to use may be expected to result in the production of an inferior product. This is the case when we feed her either too little forage or forage low in digestibility which she cannot utilize effectively. A reduction in volume of milk produced and a lowering of the solids-not-fat fraction results.

A similar situation develops when too much of the ration consists of grain or when the forage is too finely divided. The result is a drop in the percentage of fat in the milk.

In the interest of maximum volume of production and the production of a high-quality product every dairyman must, therefore, see that he first has cows inherently capable of producing a large volume of high-quality milk and second, provide the feed year-round, which they require. **THE END**

HANDY HINTS

PORTABLE HOG EQUIPMENT

Charles Mills, Sussex County, Delaware, believes in raising top-quality pigs on good heavy sod. When he shifts a "pig farm" to a new location, he takes the waterhole, trees, and shelter right along.

The trees are pipe framework with alternate wooden slats on top to provide ventilation and shade. Portable, knock-down range shelters are divided for the sows and litters.

Waterholes are large flat pans with hooks for dragging. All equipment is portable and shifted from one location to another in his program of raising thousands of pigs annually.

CHARLES L. STRATTON
New Hampshire

SKI FOR COMBINE HEAD

An automobile bumper on combine header makes header ride contours of ground better and lessens tendency to scoop up dirt.

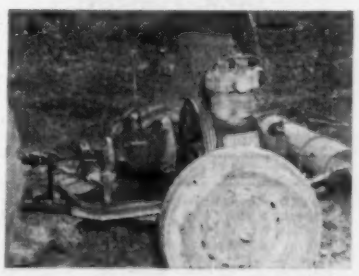
Illinois C. F. MARLEY

PREVENT RATTLING

Cut bicycle tube into proper length and fit over chains on end gate of pick-up truck. This will keep the chains from rattling.

Illinois CARL GILMAN

PORTABLE PAINT SPRAYER



The double compressor for this sprayer comes from an air tank at a gas station. The pulley shaft is coupled to an old auto transmission. Transmission is hooked to power take-off of tractor. However, only 50 pounds of pressure are used for paint spraying. The pressure tank is made of 8 and ⅝-inch outside diameter casing, 36 inches long. Universal joint on shaft allows outfit to work at any angle from power take-off.

Ohio JOHN KRILL

ALL-METAL CHARCOAL GRILL

Adolph Doelling, Stone Church, Ill., made this efficient backyard barbecue grill, from an old hot-water tank. He cut tank in half with a welding torch. One side of the tank was dropped about three inches to provide a fire door. A trap was also cut into one end to stoke the fire and clean out when needed.

Legs of gaspipe were welded to the tank, to make it serving height, and an old cold-air grill was used for the top. The grill is portable and is sturdy and weather-resistant as well.

Illinois GROVER BRINKMAN

METAL SIDEBOARDS

Sideboards for a wheelbarrow can be made easily from ½-inch round steel welded into a framework and covered with a light-gage sheet metal and bolted to wheelbarrow pan.

Can be used for bulky loads such as sawdust and silage.

Massachusetts HENRY HALEY

FURROW FOR FENCE

Before building a new fence through a field or open area, plow a furrow where the fence line will be. This makes it much easier to dig the holes and it will be an aid in building a straighter fence.

Minnesota MRS. L. F. THIESSE

SPECIAL OPPORTUNITIES

— Where Buyer and Seller Meet —

The rate for advertising in this department is 30 cents per word per insertion, except for "help wanted" and "position wanted" advertising which is only 20 cents per word per insertion. Count address. "J. W. Foley, Route 13, Green Bay, Minnesota," is considered as eight words. Blind advertisements must be signed: "BOX #, care Hoard's Dairyman, Fort Atkinson, Wisconsin" and count as 8 additional words. Count each initial or group of figures as a word. SEND CASH OR CHECK WITH ORDER. Copy must reach us four weeks ahead of date of issue. NEW ADVERTISERS MUST FURNISH REFERENCES. Send order to HOARD'S DAIRYMAN, Fort Atkinson, Wisconsin. Different rate for Livestock Display advertising.

STOCKMEN'S SUPPLIES

ARTIFICIAL breeding equipment. Largest, most complete line. Write for free catalog. NASCO, Fort Atkinson, Wisconsin. 1-*

MASTITIS TESTERS. Send for free sample and literature. DAIRY EQUIPMENT COMPANY OF OHIO, INC., Pataskala, Ohio. 3-*

HORN WEIGHTS. Made in 4 sizes ½ lb., 1 lb., 1½ lb., and 2 lbs. Tattoo markers $5.25 postpaid, includes set of numbers, bottle of ink, and full directions. We also carry complete line of ear tags, neck chains, veterinary instruments, supplies, serums, remedies; in fact, everything for the stockman. Write for free catalog. BREEDERS SUPPLY CO., Council Bluffs, Iowa. 24-*

DAIRYMAN, Butterfat tests via mail, production records. Case, tiny bottles furnished. FINAN LABORATORY, Danville, Ohio. 9-10

COMPLETE LINE of Veterinary Medicines and supplies for dairy cattle and other livestock. Write for new catalogue and quantity prices. EASTERN STATES SERUM COMPANY, 1727 Harden Street, Columbia, South Carolina. 11-24

CATTLE MARKERS

LARGEST, most complete line of cattle markers and livestock supplies. Free catalog. NASCO, Fort Atkinson, Wisconsin. 14-*

FREE illustrated price list world's finest cattle markers 50c each. Halters and other supplies. Save money. Write today. MAC-RA COMPANY, P.O. Box 1409-H, Santa Barbara, Cal. 7-*

DAISY CATTLE MARKERS, solid brass tag and brass-plated chain for horns or neck. Write for free catalog. GOLDEN ARROW FARMS, Dept. C, Huntington, Indiana. 10-*

ALL-NYLON—NO PAINT to chip out. Many colors. Free catalog. CREUTZBURG & SON, Wayne, Pennsylvania. 6-*

DAIRY EQUIPMENT

FOR SALE — Used can coolers, used ten gallon cans. Milking machines. Truck loads or less delivered. E.H. CRULL, Evansville, Wisconsin. Phone 669R4. 11-2

330 GALLON CRAFT bulk tank for sale. ROGER CARLSON, R.R. 3, Lake Villa, Illinois.

40 COW GRASS Machine. $2500. Cost $5000. LAZY J. J. RANCH, Evant, Texas.

PIPELINE UNIVERSAL for sale. 3 unit. RAYMOND KLEIN, Higginsville, Missouri.

FARM EQUIPMENT

DEPRESSION PRICES. WE SELL CHEAP. Save 75% off new and used tractor parts, crawlers and wheel tractors. 190 makes and models. 1958 catalog ready. Send 25 cents refundable. SURPLUS TRACTOR PARTS CORPORATION, Fargo, N. Dak. 1-12

BARN EQUIPMENT, barn cleaner, comfort stalls, stanchions, milking parlor stalls, windows. Guaranteed. Immediate shipment. STANDARD EQUIPMENT, INC., Dept. 3-C, Bel Air, Maryland. Phone 417. 3-*

200 FT. OF Used Jamesway bull and cow pen panel in good condition. DON BURTON, 3006 Olive Street, Racine, Wisconsin. 12-2

IRRIGATION EQUIPMENT

IRRIGATION—Genuine auto-lock systems, Gorman-Rupp pumps, design service, new and used equipment, low installed cost. MICHIGAN ORCHARD SUPPLY COMPANY, Box 251, South Haven, Michigan. Phone 252. 9-*

HAY AND BEDDING

GRADED DAIRY ALFALFA, clover, other top grades hay. Quality, weights guaranteed. ART CALLARI HAY CO., Upper Sandusky, O. 16-*

SILOS

FEED SILAGE MECHANICALLY with P & D silo unloader and auger bunk feeder. P & D improved unloader easily feeds 6 to 8 tons an hour the push button way. Hard packed or frozen silage no problem. 30 days free trial. 3 years to pay. Fully guaranteed. Good openings for dealership. Write for free information. P & D SALES COMPANY, Plainfield 6, Illinois. 7-*

CLOSING OUT our stock of Silo-Matic silo unloaders. At a reduced price while they last. We have discontinued handling them. P & D SALES COMPANY, Plainfield 6, Ill. 8-*

FORAGEMASTER — SILOS. Liberal cash discount for early orders. Write for information. ROWELL, INC., 752 Vandalia Street, St. Paul 14, Minnesota. 24-*

BLACK POLYETHYLENE Silage Covers. 16½' x 16½'—6 mil $8.16; 4 mil $5.45. All sizes for trench, bunker silos. Special splicing tape for polyethylene available. Dealer inquiries invited. FRONERG DISTRIBUTING COMPANY, Box H-72, Valparaiso, Indiana. 10-4

$240 BUILDS AVERAGE lifetime upright perfectly round silo from concrete blocks. Nationwide accepted. Easy plans $5. PAUL HOLOWKA, R.D. # 4, York, Pennsylvania.

DAIRIES

PRODUCER DISTRIBUTOR Dairy Ranch — 46 acres, 23 irrigated. Pasteurized, Homogenized and raw milk sold in gallons and half gallons. Wholesale to grocery stores. 50 cow Guernsey milking herd, 60 head young stock, modern home. Good business and income for two families. Terms. Post Office BOX 921, Medford, Oregon.

BUSINESS OPPORTUNITIES

FREE PICTURE FOLDER: "How to make $3,000 yearly, sparetime, raising earthworms!" OAKHAVEN-24, Cedar Hill, Texas. 6-*

AUCTIONEER SCHOOLS

LEARN AUCTIONEERING. Term soon. Write for catalog. MISSOURI AUCTION SCHOOL, Box 5303D6, Kansas City, Missouri 12-*

LEARN AUCTIONEERING, terms, soon. Free catalog. REISCH AUCTION SCHOOL, Mason City, Iowa. 23-*

FARMS FOR SALE

762 ACRES—200 acres, modern house, driveway dairy barn, silo and all necessary buildings—262 acres, good house, driveway dairy barn, 2 silos, milk house, hog pens, etc. New all steel machine shed, 300 acres pasture adjoining. Can all be sold as a unit or divide, terms.—200 acre the finest and most modern and most complete dairy farm west of Madison, Grade A in every way.—1400 acre improved, the finest big stock and grain farm in one piece to be found in Wisconsin in this blue grass area. Phone 3091. GEORGE W. WALKER, Platteville, Wisconsin. 10-6

ALABAMA Blackbelt cloverland dairies, no snows, twelve months grazing, $6.33 milk, write us your requirements. ERNEST F. RANDALL, Realtor, Box 368, Selma, Ala. 11-*

VIRGINIA livestock, dairy farms and country estates. P. M. BROWNING, Realtor, John H. Hitt, Associate, Culpeper, Virginia. 7-*

VIRGINIA DAIRY AND CATTLE farms priced to sell, for details write: JOEL M. COCHRAN, Realtor, 414 East Jefferson Street, Charlottesville, Virginia. 8-6

WHY PAY RENT—200 acres, with beautiful 9 room modern brick home, large barn, 2 silos, machine shed, equipped with 44 head of cattle, 2 tractors, chopper, blower & other machinery. Total price $42,250, $10,000 down. —120 acres with new barn 36 by 82, 12 by 35 silo, 3 bedroom home, hot and cold water, 29 head Holstein cattle, baler & most other machinery complete, $23,000; about $10,000 down, rest on milk check basis. Free list. JOHNSON REALTY, Route 2, Marshfield, Wisconsin. Phone Lindsey 1304. 9-*

CENTRAL TENNESSEE high phosphate bluegrass dairy and general purpose farms. Moderate winters. $125 to $200 per acre. BILLINGTON & COMPANY, Franklin, Tenn. 11-*

OUTSTANDING DAIRY FARM, over 300 acres, wonderful buildings — dairy herd — and complete farm machinery, just outside City limits, must be seen to appreciate value. Poor health reason for selling. JOHN LUNENSCHLOSS, Richland Center, Wisconsin. 11-2

CENTRAL WISCONSIN DAIRY Farms — 120 acre farm, machinery, cattle and crops, lovely modern home, large barn, machine shed, cement silo — all for only $25,000 — excellent terms. Many other farms, write for free list. VERN STEVENS, Route 3, Marshfield, Wisconsin. Phone Spencer 2236. Representing Arthur L. Boock Agency. 11-2

BEAUTIFUL Blackbelt Farms. All sizes. WINSLETT REALTY COMPANY, Marion, Ala. 12-2

MODERN FARM HOMES. Beautiful Wisconsin lake and dairying region. Convenient to Twin Cities. $75 per acre and up. BAKER LAND & TITLE COMPANY, Land Specialists since 1874, St. Croix Falls, Wisconsin.

BY OWNER, 75 acre grade A dairy farm in Western Washington. MARIE WILKINSON, Onalaska, Washington. 12-2

DAIRY, BEEF, and grain farm located 2 miles from New Richmond, Wisconsin. 400 acres, 275 cultivated. Very good modern 8 room house. Extra 6 room house. Complete set of farm buildings. $100 per acre, only $12,000 down. Also many other Western Wisconsin farms, $3500 to $37,500. Write for lists. HATHAWAY AGENCY, Hammond, Wis.

BIG STROUT CATALOG! Mailed free! Farms, homes, businesses, coast-to-coast, 34 states, around 3000 bargains. World's largest: 58 years' service. STROUT REALTY, 7-TF S. Dearborn, Chicago 3, Illinois. 11-3

GEORGIA DAIRIES, Southwest section near Albany, Georgia. 1,000 acre farm with milk contract, 75 cows, all new pipeline system for $63,500. 550 acres in rich farming community, milking 40 cows, could handle more. Other dairies available — large or small. What are your needs? 27 years of professional farm management experience available. OPEKASIT, 113 Gillespie, Albany, Georgia. 11-2

FARMS FOR RENT

A 200 ACRE well equipped dairy farm for rent. Registered Jersey cattle, hogs and chickens. Located in the heigh bottom land near Patriot, Switzerland County, Indiana. Rented on 50-50 basis. The tenant to own one-half the stock and all machinery to farm the land. If interested write: G. E. MOREDOCK, Patriot, Indiana.

HELP WANTED

WANTED—Experienced, reliable working farm manager, with own help, 30 milking herd. Position open July 1. Ashland County, Wisconsin. Apartment and utilities. State experience and references. MAX RADLOFF JR., High Bridge, Wisconsin. 11-2

WANTED, Farm Manager for tract of 1,500 acres near Washington, D. C. Two dairy herds and one heifer farm operated. Agricultural College graduate preferred from 30-40 years old. Small family desirable. House furnished. State qualifications. Write BOX 90, care Hoard's Dairyman, Fort Atkinson, Wisconsin.

HELP WANTED

EXPERIENCED ARTIFICIAL Breeding Technician. Salary paid and car furnished. No book work. Send full particulars and salary expected. DIXIE PROVED SIRE SERVICE, 105 Azalea Drive, Montgomery 5, Alabama.

WIDOW NEEDS good reliable herdsman for Grade A Jersey herd. Modern equipment. No extra house so single elderly man preferred. Capable clean manager, no drinker. BOX 94, care Hoard's Dairyman, Fort Atkinson, Wis. 12-2

MIDDLE-AGED single man for small herd of registered Jerseys, located in Northern Ohio. Must be sober and reliable, interested in making top records. Room, board and laundry furnished. Modern equipment. Permanent. State salary and experience. Must furnish references. BOX 91, care Hoard's Dairyman, Fort Atkinson, Wisconsin.

MARRIED MAN to work with registered Holsteins for farmer breeder. Modern house. Top wages for reliable man. BOX 89, care Hoard's Dairyman, Fort Atkinson, Wisconsin. 11-2

POSITIONS WANTED

EXPERIENCED, BONDED relief herdsmen and assistants. Dairy herds managed for indefinite periods in the event of illness, accident or vacations. Also 26 weeks free accident/sickness service. Write THE RELIEF MILKING SERVICE OF AMERICA, 3110 Marvin, Toledo 6, Ohio. Allstates Emergency Milking phone GReenwood 9-6226. 9-*

ASSISTANT OR MANAGER Holstein farm. College graduate, 25, vet, married. Experienced in feeding, breeding, cattle care. References. Would be interested in working under leading herdsmen. C. F. GREENE, 504 Main Street, Trappe Collegeville, Pennsylvania.

HERDSMAN OR FARM Manager, age 33, experienced with registered Holsteins, B.S. in Agriculture, artificial breeding experience. BOX 93, care Hoard's Dairyman, Fort Atkinson, Wisconsin.

HERD MANAGER, married, strictly sober, dependable, proven ability with feeding, good and extensive records, sanitation, health, artificial insemination, pregnancy examinations, labor management. Full herd responsibility, references. BOX 95, care Hoard's Dairyman, Fort Atkinson, Wisconsin.

DAIRY FARM MANAGER or Herdsman, married, lifetime experience with Purebreds, qualified, fitting, feeding, artificial insemination, calf raising. Graham School and college training. BOX 92, care Hoard's Dairyman, Fort Atkinson, Wisconsin.

SWINE

FOR SALE, top quality Wisconsin feeder pigs, 8-10 weeks old. All farmer raised around here, no runts. All veterinary inspected. Get your pigs from a licensed dealer and get toppers. CLARENCE ACKER, Middleton, Wisconsin. Phone Terrace 6-3451. 1-*

DOGS

GENUINE English Shepherd and Collie Pups. Healthy and strong. Guaranteed heelers. Year's trial. Choice of sex. Spayed females a specialty. Priced right. CLOVERDALE KENNEL FARM, Ackley, Iowa. 18-*

SHEPHERDS, COLLIES. Outstanding Heelers, Watch Dogs. ZIMMERMAN FARMS, Flanagan, Illinois. 2-*

RABBITS

RAISE ANGORA, New Zealand Rabbits on $500 month plan. Plenty markets. Free details. WHITE'S RABBITRY, Delaware, Ohio. 10-*

POULTRY—BABY CHICKS—DUCKS

ROCKS, HAMPSHIRES, Leghorns, Austra-whites $6.99, Pullets $16.99, heavies $6.49, table use $5.99, fryers $2.99, surplus $1.49. BUSH HATCHERY, Clinton, Missouri. 10-*

DUCKLINGS—many breeds—price list available weekly till August 1st. COKATO WATERFOWL, Cokato, Minnesota. Telephone 61325.

OF INTEREST TO WOMEN

LEARN professional cake decorating. Details free. DECO-SECRETS, Venice 34, Calif. 14-*

SEW AND WIN WITH COTTON BAGS, 24 cash prizes and a Singer Portable sewing machine at your state or regional fair. Week's entertainment in New York City and valuable gifts for national winners. Write: COTTON COUNCIL, Box 9905, Memphis 12, Tenn. 8-spl

MISCELLANEOUS

PLASTIC SHEET for all farm purposes; low as 1c per square ft. in 100 ft. rolls; free delivery to your farm. Famous Sitting Bull brand, used on thousands of farms; proved the best quality, black polyethylene, tough, long lived. Unconditionally guaranteed to satisfy or money back. 2 mil thick, perfect for garden mulch, 4½ ft. wide, 100 ft. rolls, 1c a square ft. 4 mil @ 2c a sq. ft. and 6 mil @ 3c, available in 100 ft. rolls and widths of 20 ft., 24 ft., 28 ft., 32 ft., 40 ft. Send check with order; we pay shipping costs. PLASTIC SILAGE COVER COMPANY, Route 3, New Richmond, Wis. 9-*

HISTORICAL FLASKS wanted, liberal prices, describe. GORDON KEIPER, Dunkirk, Ohio.

DAIRY CATTLE

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HAWTHORN-MELLODY FARMS offer choice Purebred Holstein heifers and bulls from Dams up to 850 pounds fat. Also show heifers and calves. 900 head to choose from. LIBERTYVILLE, ILLINOIS. 11-4

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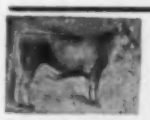

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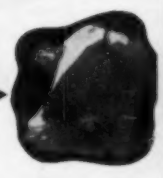

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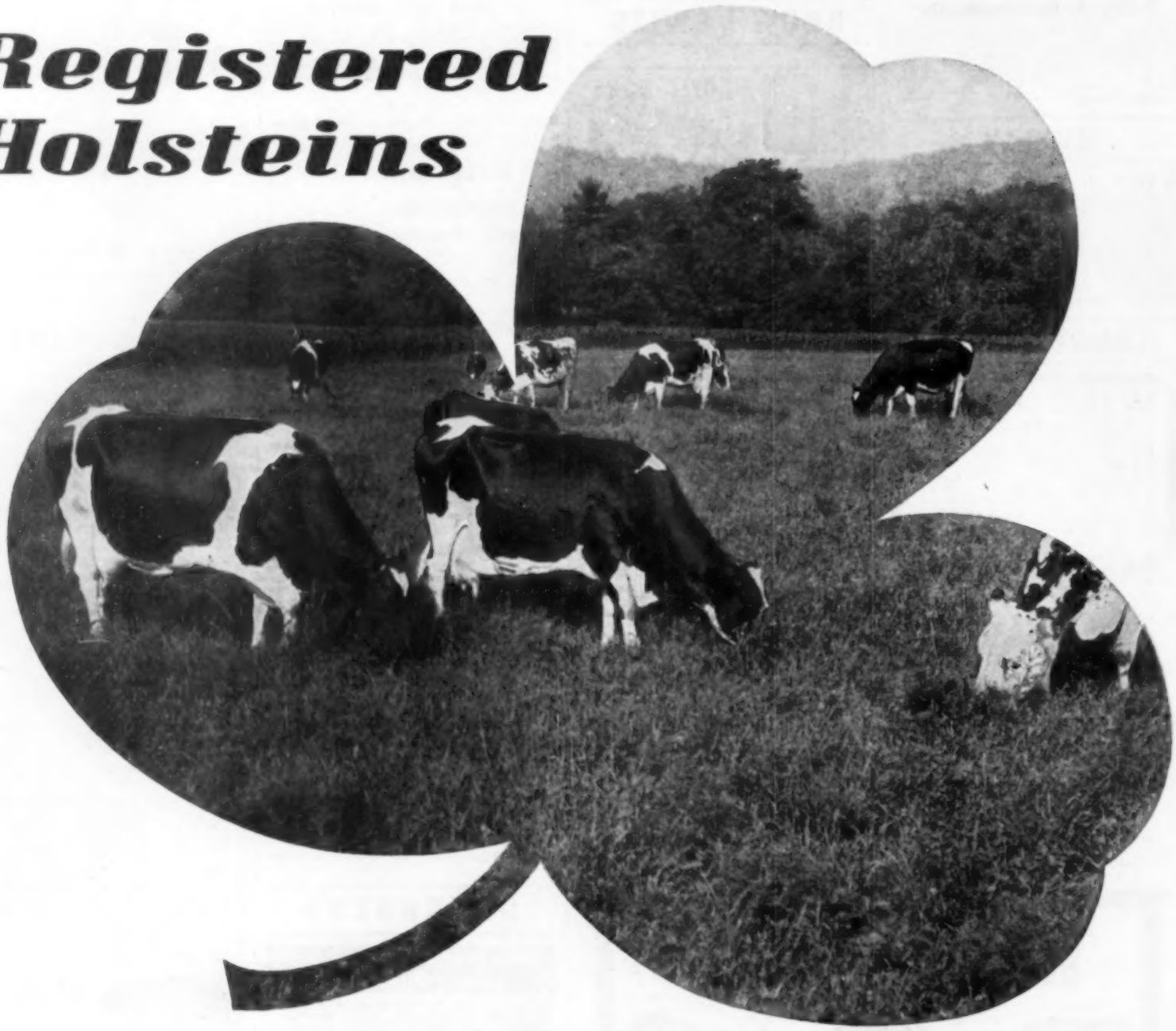

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This calf is dammed by Terra Firma Roamer Ormsby, who as a 2 year old produced 13,499 lbs. milk and 493 lbs. butterfat with a 3.7 test. She is a daughter of Pabst Roamer and is showing good prospects of making a foundation cow. For price and pedigree write:

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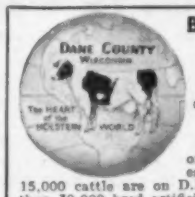

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This month we offer Ear Tag 1425 born 11-30-57, marked about 60% white and is a real nice calf. His sire is Carnation Priority "Very Good" a son of Carnation Flashy Chief and from a 860 lb. "Very Good" daughter of Carnation Renown. Priority's offspring have plenty of size and look very promising. The dam of this calf is Green Meadow Princess Dark Day. She classified Good Plus on her first classification and has 8100 lb. milk 3.8% 305 lb. fat in 180 days so far this year. Her sire is Carnation Dynamo whose daughters are milking up to 60 lbs. a day as 2-year olds and making real good records. His first 13 classified daughters average 83.3 pts. 100% Good Plus or better. Her dam has records up to 725 lb. fat and is sired by Constellation "VG" "Gold Medal." Many of our best cows have come from this family with several making over 1000 lbs. fat. The first check for the bargain price of $250 F.O.B. Elsie, takes this calf. Write today, GREEN MEADOW FARMS, ELSIE, MICHIGAN. Phone Union 2-4389 or Phone Union 2-5009

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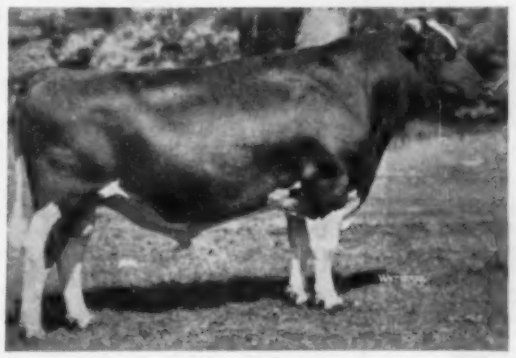

A Son and a Grandson of this Great Bull are at Curtiss.

WIS. IDEAL "EX" GOLD MEDAL

All-American Jr. Yearling 1946; Res. All-Amer. 2-yr. Old 1947; 58 AR dtrs., 10 from 801 to 1002 lbs. Fat, 41 from 504 to 800 lbs. Fat; 33 classified av: 85.2%; sire of 12 "EX"; 61 dtrs. av: 13885—3.64%—506F, ME, +770M +26F over dams. Sire of 5 Gold Medal sons; 11 Sil. Med. Prod.

His son at Curtiss is: WIS AVALANCHE "GP" 84 pts.; aAa: RRR; 6 years old. First two dtrs. clsfd. "VG" and "GP" as 2-yr. olds. They av: 17985-3.60% - 647, ME; +2763M +.10% +101F.

His dam is Wis Empress Burke "VG" 23260M - 3.7% - 858F at 6y; 23212-3.6-839.8 at 4½y. She is second highest producing dtr. of Wis. Leader "EX" GM.

Wis Ideal's grandson at Curtiss is: WIS SUPREME CRUSADER "VG" 88 pts.; aAa: SRR; 6 yrs. old (clsfd. "EX" on Dy. Char. and Body) First 6 dtrs., 2 "VG", 3 "GP", av: 14480-4.0%-580 ME; +1160M +.12% +68F over dams.

Sire: Wis Supreme SMP (son of Wis Ideal), 11 dtrs. av: 16080-3.78%-608, ME; +1655M +43F

Dam: Wis Belle Crusader, 20539-3.7%-757 at 4½y; 20108-3.7-752 at 6y.

Curtiss has more than 1000 technicians in 43 states; (also openings for more men). See your nearest Curtiss technician or write us for pictures of our bulls and full information. Five dairy breeds, three beef and one dual purpose.

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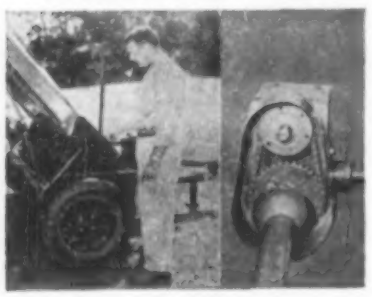

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Rabies still a threat

This dread disease is readily transmitted to animals and man. Public indifference has hindered effective control.

by E. A. Woelffer, D.V.M.

THE dreaded infection, rabies, continues to crop up in many parts of the country. If your community is free of the disease at the present time, feel fortunate, but beware; it may appear.

Rabies is transmitted to other animals and man from bites of dogs or other carnivorous animals.

Dogs are considered the principal source of the infection. It isn't because they are more susceptible than other animals, but because they tend to roam over larger areas and have greater contact with animals and people.

Other animals which may harbor the infection are cats, cows, horses; and such wild animals as foxes, badgers, skunks, ferrets, squirrels, wildcats, and so forth.

Certain types of bats are frequent carriers of the rabies virus. These carriers have been a concern for a great many years in the Latin American countries and in the southernmost parts of the United States. Their presence, however, has spread to states farther north in recent years so an outbreak of rabies from this source may occur at any time or place.

Not a myth . . .

It is difficult to understand why rabies has been such a mystifying disease to so many people. To some, rabies is just a myth. Others refuse to admit the facts.

This ignorance or indifference could well be the cause of a child or adult dying a horrible death.

Rabies is a serious disease, too serious for any irresponsible inactions or neglect. In his book entitled "Rabies," Lyle T. Webster, M. D. describes a typical case of rabies in this manner. "A dog comes down the street, running crazily this way and that, bumping into objects as though blind or dazed, frothing at the mouth, snapping viciously yet aimlessly at man, beast, stick, or stone.

"Only a short time ago he was somebody's devoted pet, seemingly normal. Now he cannot be controlled or quieted. He does not recognize his master or friends, will not eat or drink but runs continuously about, uttering sharp cries in pain. Perhaps within a few hours, or maybe in two or three days, the cry becomes hoarse and weak, activity diminishes, convulsions seize the animal, and presently he is dead."

This spectacle from time immemorial has brought forth the terrible cry "mad dog." One's reaction to this sight depends upon his knowledge of rabies infection. To the uninformed, the animal suddenly becomes seriously sick. He is going to die and meanwhile is likely to bite and so cause the disease in another.

To the informed individual, the animal has reached the final stage of its unsuccessful struggle against the rabies virus. The former is aware of the immediate danger only. The latter is also concerned with the grave danger the animal may have previously inflicted.

A virus typical of causing rabies might have been present in the animal's saliva several days before any symptoms were noticed. If the bite is through clothing, the infection is sometimes wiped off as the teeth penetrate it. At such times the flesh wound may escape infection.

There is a delay in time between the infection and the time symptoms appear. This lapse is known as the incubation (hatching) period. It varies in length in different species of animals. The location of the bite also influences the length of the incubation period.

The rabies virus appears to have an affinity for nervous tissue, particularly the brain. If the bite is in the leg, a longer delay is anticipated before symptoms show up than if the bite occurs on the face. This is due to the greater distance the virus must travel to the brain.

The average incubation period in the dog is three to six weeks. In the horse and cow it is two to 10 days; in sheep and goats three to four weeks; and in swine two to three weeks. In rare instances, the period may be as long as three months.

Symptoms . . .

Rabies is often divided into two forms; one is known as dumb rabies; the other as furious rabies.

Dogs with rabies usually go through three distinct stages. At first the animal is restless, irritable, and avoids people. The second stage is marked by aimless wandering. The final stage is recognized by paralysis of the muscles.

Infected cattle often refuse ordinary food. Instead they lick or chew on indigestible substances such as dirt, straw, stones, and so forth. Sometimes an intense itching develops. The animal licks or chews on the affected part. This last symptom also is seen in horses.

Dogs often show hallucinations, such as snapping at an imaginary fly. The bark changes to a hoarse howl, particularly during the end of the second stage. The jaw usually drops and there is drooling of saliva. There is a staring expression; swallowing is difficult.

Cattle become restless, excitable, and aggressive. They often stand in one place, raise and lower the head, dig their horns, and show spasms much like other infected animals. Paralysis of the throat, which may strike any affected animal, is sometimes mistaken for symptoms of choke.

Failures in control . . .

Inadequate information, indifference, selfishness, and reluctance of dog owners to confine their pets when infection is present in a community, accounts in a large measure for the frequent wholesale ineffectiveness of rabies control programs.

Lawmakers and regulatory enforcement agencies have a responsibility to control or wipe out this dread disease but the major share of the burden must rest with the public. When the honest, free-minded citizen becomes sufficiently aroused, action will be taken to adequately control this disease.

Vaccination gives immunity . . .

Improved vaccines are now available for dogs. They confer a relatively effective immunity for a period of one to four years. Vaccination of cows that have been exposed to bites from rabid dogs or foxes has not been widely followed, principally because of the cost of the vaccine.

Pasteur was the first scientist to vaccinate people who had been bitten by rabid dogs. Modification of these methods are still used.

Vaccination as a sole medium of control cannot be expected to be 100 per cent effective. There also must be inaugurated an effective nationwide educational program; quarantines with strict enforcement, and organized official vaccinations by veterinary clinics.

In view of current and pending outbreaks of this dread disease, there is little reason why health officials and the public cooperating should not embark upon an all-out program to eradicate rabies once and for all time.

Urges cottage cheese to solve dairy surplus

A major step toward the solution of the nation's dairy surplus problem lies in the effective promotion of cottage cheese, according to Richard J. Werner, executive director, Milk Industry Foundation.

"If the per capita consumption of high protein foods could be increased as much as dietary deficiencies require," Werner asserts, "the United States would face a shortage instead of a surplus of milk solids."

He said that on a national basis, the average annual consumption of cottage cheese is less than five pounds per person. In New York state it is only 4.7 pounds, and the far west it is 12 pounds.

"An increase in the national average of an additional five pounds per person per year would eliminate the milk solids surplus," he emphasized. This would mean that each person would have to eat only about 3 ounces more cottage cheese each week.

Werner also points out that cottage cheese is high in protein, one of our most valuable nutrients. The protein in cottage cheese costs only $1.50 a pound, as compared with $1.84 for a pound of protein in hamburger, $2.98 for a pound of protein in eggs, and $5.55 for a pound protein in pork chops.

VETERINARY COLUMN

E. A. WOELFFER, D.V.M.

Mummified fetus

Veterinarians often are called to examine cows that are overdue, or are to freshen within a few weeks or days, but fail to show calving signs. The familiar signs of immediate calving are absent in cows carrying a mummified fetus.

We visited a herd recently where the owner had been raising cows for nearly 30 years but had never seen a mummified fetus. This was his first experience.

The exact cause is not known. A theory advanced is that a mechanical injury may bring about a separation of the maternal caruncles and fetal cotyledons.

The supply of nutrients to the fetus is cut off, and the fetus dies from starvation.

Excessive bleeding also may be responsible for the separation of these points of contact.

Our present concept of the underlying cause of mummified fetus is the presence of excessive lethal characters in one of the parents. The likelihood of mummified fetus is believed to be much greater when both parents are carriers of the recessive genes.

Mummified fetus can occur in any breed but dairy cattle appear to be the most frequent carriers. Inbreeding in some herds of Guernsey cattle has caused fetal mummification to become a serious problem.

Symptoms absent . . .

Symptoms denoting illness or sickness in a cow carrying a mummified fetus usually are absent. The first suspected sign noticed by the herdsman or owner is lack of increased body capacity and failure of the udder to develop, as is seen in approaching freshening.

Occasionally a cow will exhibit heat while a mummy is present in the uterus. As a rule, heats do not occur while the cow is carrying a mummified fetus. Sometimes the mummy will be aborted spontaneously, but more often treatment is required to induce abortion.

A mummy which has been carried in the uterus for some months will be found hard and shrunken. The fetus shrinks and becomes relatively hard because moisture is absorbed from the fetal tissues. Usually infection is not present. Mummified fetuses vary in size from a small rat to a small dog, depending upon the age of the fetus at the time of its death.

Treatment . . .

When a cow in your herd fails to show normal symptoms of calving, have her examined by your veterinarian. She may be open, but she may also be carrying a mummified fetus.

Generally the fetus can be readily removed by injections of relatively large doses of estrogenic hormones. When this fails, veterinarians often resort to supplementary infusions of the uterus.

It is a rare situation when a mummified fetus cannot be removed through the usual methods of treatment. In such cases, the animal should be sent to slaughter. If the animal is valuable, a Caesarean section may be performed.

VACCINATION CAUSED SHOCK

I have a calf that was born November 1. On April 1, I had it vaccinated for Bang's. On April 2 the calf was paralyzed, blind, and deaf. Would vaccine cause this?

Leopolis, Wis. E. J. K.

Undoubtedly the symptoms you describe are the result of vaccination. Usually the cause is an anaphylactic shock. You should report to your veterinarian so that he, in turn, can report to the manufacturer of the vaccine.

TO PREVENT LEAD POISONING

Last summer I painted the inside of my barn, including a boxstall. I painted the bottom half of the sides with a dark green linseed and white lead paint.

Two months later I brought a cow into the boxstall where she calved. I left the cow and calf together for a week, after which I bucket fed the calf.

In about a week the calf got sick, had diarrhea, and though it drank its milk readily, it became weak and wobbly on its legs. I called a veterinarian and after looking into the calf's mouth, he diagnosed the condition as calf diphtheria. He gave it a shot of penicillin and left some other medicine; two days later it died.

When I cleaned and disinfected the stall later, I noticed the paint had been chewed or sucked off in several places, and now I am wondering if the calf died from lead or paint poisoning. And, if it did, what can I do to neutralize the paint before bringing another calf into the stall?

Ames, Nebraska R. J.

Undoubtedly the calf was in a weakened condition from infection in the throat. It is possible death may have resulted from an accumulation of lead from licking or chewing the paint.

Covering the white lead with another layer of paint may not be the answer to your problem. Perhaps the best solution is to cover the painted area with sheets of aluminum, galvanized iron, plywood, or other material. Your hardware or lumber dealer probably can advise you on materials.

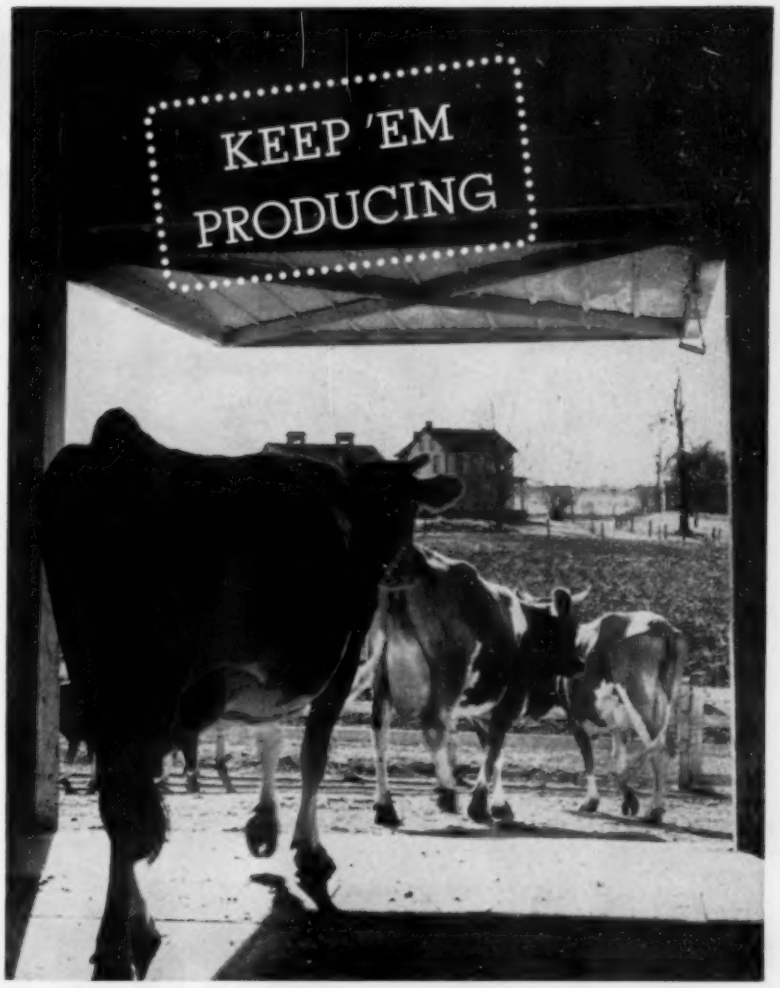
REMOVING EXTRA TEATS

I have a few cows that have extra teats on the rear part of the udder. Can elastrator bands be used to remove them? Is it necessary to wait until the cows are dry before doing this?

Campbell, Minnesota D. T.

Extra teats may be removed with emasculator bands. It is not necessary to wait until the cow is dry before doing it. Healing will take place without any difficulty, unless there is a partially-developed gland present; then there may be seepage of milk or serum.

We prefer to remove extra teats with a curved scissors or emasculatone. A neater job results. A good time to remove extra teats is at calfhood vaccination.



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Nolvasan sanitizing solution kills most mastitis-causing bacteria on contact. Use it daily as an udder wash, for dipping teat ends after milking, and for sanitizing equipment. Nonirritant to the skin, will not chap, odorless. Retains its bacteria-destroying activity even in the presence of traces of milk and other organic matter. Will not damage equipment.

Soxipent FOR TREATMENT

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Combines 2 antibiotics and 2 sulfas with cobalt. So effective, no organism usually associated with mastitis can withstand it. Soxipent can be safely used in healthy quarters to prevent the spread of infection. Its persistent action helps clear up even the most stubborn mastitis cases.

Nolvasan and Soxipent are dispensed only by veterinarians

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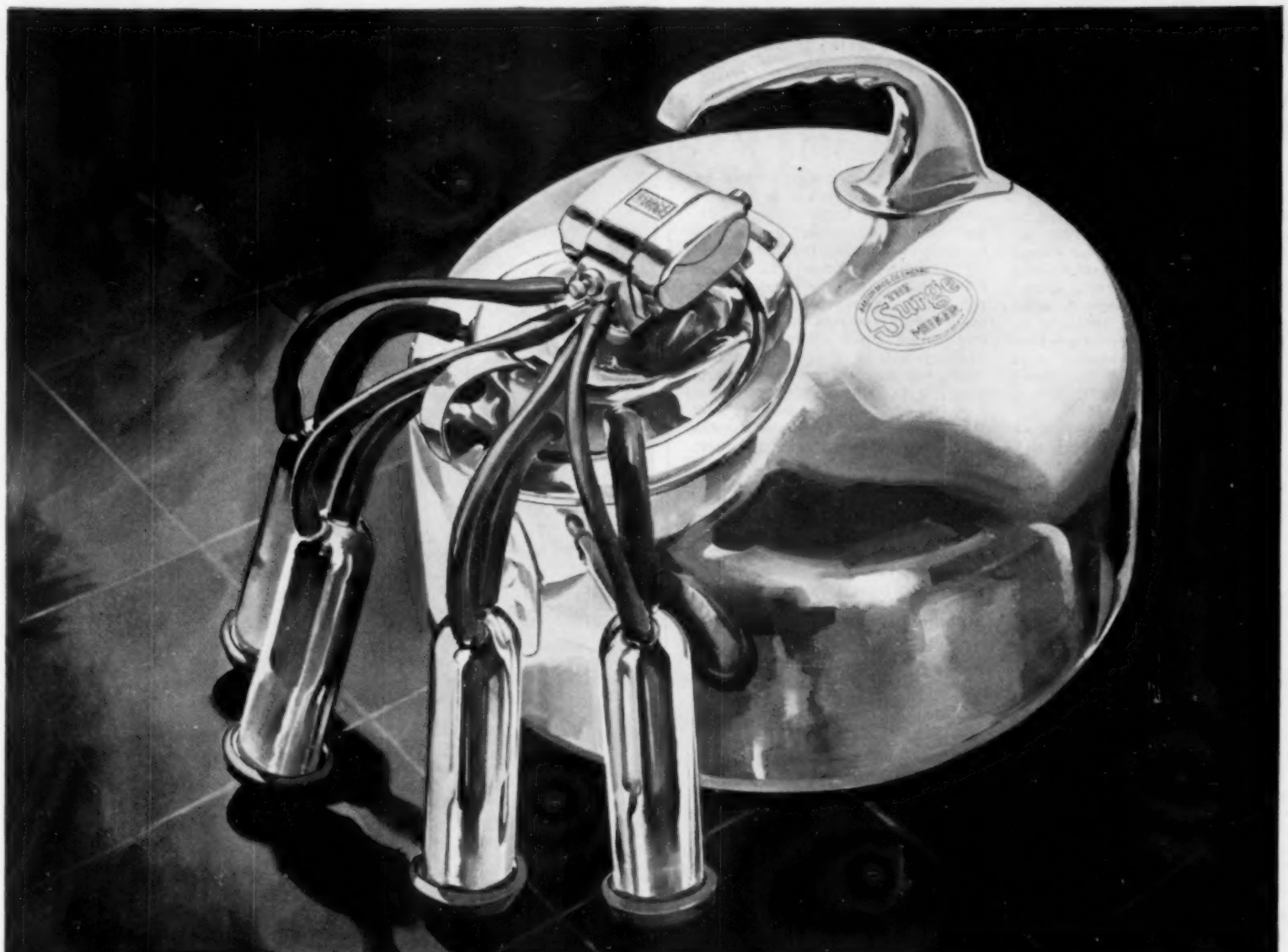

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